The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLV. CHICAGO ILLINOIS, OCTOBER 7, 1905. No. 15.

Address

THE RESPONSIBILITIES OF SURGERY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON SURGERY AND ANATOMY, AT THE FIFTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, PORTLAND, ORE., JULY 11-14, 1905.

MAURICE H. RICHARDSON, M.D.

BOSTON.

In this communication I wish, in the first place, to pay a warm tribute to the splendid work that is being done in this country by the surgical profession; and I wish to emphasize particularly the value of the contributions from the country surgeon as distinguished from the metropolitan surgeon. That a populous community is not indispensable for the development of the best and the highest the little town of Rochester, Minn., has most brilliantly demonstrated. The educated, well-balanced, conservative man, considerate of others and of himself, will find in every community abundant opportunities for the highest professional attainments; and he will there make himself a power for good and an honor to his profession.

It has seemed to me, especially in the past few years, as I have been brought in contact with physicians and patients in widely separated communities, that the time has come when we must consider very seriously certain questions concerning the practice of surgery: Who shall practice surgery and who shall not? What preparation shall be required of those who propose to stand before the community as properly qualified surgeons?

The burden of the following remarks is that those only should practice surgery who, by education in the laboratory, in the dissecting room, by the bedside and at the operating table, are qualified, first, to make reasonably correct deductions from subjective and objective signs; secondly, to give sound advice for or against operations; thirdly, to perform operations skillfully and quickly, and, fourthly, to conduct wisely the after-treatment.

As a rule, the community does not appreciate the value of services, whether medical or surgical, because it fails to realize in the least degree the burden of care placed on the physician and on the surgeon. The layman does not always understand that a mistake in diagnosis, an error in judgment, a fault in technic, may mean life or death, health or sickness, strength or disability, joy or sorrow. He can not in the least comprehend the difficulty of avoiding these errors; he does not realize that the *vis medicatrix naturæ*, too little relied on in the past, too much in the present, receives to-day credit which belongs almost wholly to the educated and skillful practitioners of medicine and surgery.

The community is, perhaps, not to be criticized if it fails to estimate properly the value of professional services when it sees problems demanding exercise of the highest skill undertaken by men but little trained to solve them. That the community is sincere can not be denied when the lives and health of its nearest and dearest are submitted to the ignorant, the inexperienced, the unskillful. This shows, perhaps, more than anything else the contempt for thorough education and long training which makes possible the evils of which I speak. On the part of the laity, sound opinion is much to be desired; on the part of the profession, a candid admission of certain serious defects. In matters surgical, however, public opinion is hard to mould, for the reason that the results, on the whole, are good, whatever the operation and whoever the operator. An amputation results in recovery of the patient; the surgeon's skill is manifest to the family and friends, who fail to see that the amputation was, perhaps, unnecessary. A patient dies after a hysterectomy; the community—realizing that the operation is a dangerous one and believing that patients seldom recover from it, unaware that the mortality in skillful hands is not greater than that of childbirth—looks on the result as inevitable.

The consulting surgeon can not but be impressed by the frequency of useless or worse than useless operations. He sees too often the unfortunate results of hastening the patient into operative procedures based on errors in diagnosis and in prognosis. On the other hand, he sometimes sees a patient refused an operation which is called for in the most positive tones.

Perhaps the most common error, as observed by the consulting surgeon, is the failure to detect at the earliest possible moment those internal lesions which demand, as the only chance of recovery, instant operation. The mortality in these cases is the mortality of acute abdominal surgery to-day. Excluding acute abdominal emergencies and cerebral hemorrhage of traumatic origin, the mortality of surgery is trifling. The responsibility of deciding to call the surgeon must rest, of course, first on the family and then on the physician. Too often, however, the necessity of intervention is not recognized even by the surgeon. One seldom sees a newspaper that does not contain an account of the loss of a life which might have been saved by prompt and skillful surgery.

The task before me is a serious criticism of what is going on in every community. I do not single out any community or any man. There is, in my mind, no doubt whatever that surgery is being practiced by those who are incompetent to practice it—by those whose education is imperfect, who lack natural aptitude, whose environment is such that they never can gain that personal experience which alone will really fit them for what surgery means to-day. They are unable to make correct deductions from histories; to predict probable events; to perform operations skillfully; or to manage after-treatment.

The chief source of trouble lies in the ambition—perfectly laudable—which so large a proportion of medical men possess, to become surgeons. The hos-

pitals in many small communities have on their staffs every medical man of prominence in town, all of whom take alike the medical and the surgical services. The reason for this is that the co-operation of every physician is necessary in order that the hospital may be built. A place on the staff becomes a *sine qua non*.

The truth is that in small places the two or three men best fitted for surgery should be made the surgeons of the place, and to them should be referred all surgical work. With the great development of surgery to-day, it is, indeed, a sparse community which can not support two surgeons. It is, I think, incumbent on these men to give up to the others their medical practice. In this way alone may surgeons become fitted for the responsibilities of surgery in the less populous areas; and in this way they will receive an education and experience which may make them of national or even international reputation.

But may we not depend on a process of natural selection in the development of the surgeon—a survival of the fittest? This process will, no doubt, prove in time effectual, but in the meanwhile hospital positions and other opportunities will remain in the hands of those unable properly to utilize them. We have time and again seen positions held to the age limit by those on whom the great opportunities of a large clinic were almost wholly wasted.

The man who by nature is endowed with the gifts which make him a good practitioner of surgery will not fail to make the best use of those gifts, whatever his environment.

Though the task of criticism that I have before me is a disagreeable one, the time has come when the attention of a representative body like this should be called to what is going on in every community.

Perhaps the least offensive way in which to treat this part of my subject would be by limiting my illustrations, as far as possible, to things which I have seen and done during many years of surgical practice. For if one of ordinary intelligence and education, who has had unusual opportunities to gain experience, is liable to err, how much more liable is he to whom opportunities for study and practice have been wanting. As human frailty precludes the absolute prevention of errors, even in the hands of the experienced, it must follow that in the hands of the inexperienced they will occur in a much larger proportion of cases. Some operators show, in the very beginning of their practice, a skill which can never be attained by others, even after years of operating; but, other things being equal, the better the training the better the results.

As far as my observation goes, the most serious errors have resulted from treating as benign those tumors which were, in reality, malignant. The most costly have resulted from giving too favorable prognoses in acute abdominal diseases. Most of these cases I have reported as they have occurred. Several tumors of the breast I have regarded as simple retention cysts or as fibromata; and the patient, relying on this opinion, has gone away, only to return at the end of a few years with extensive cancer. Cases of this kind have convinced me that the only safe rule in the treatment of tumors of the breast is to regard them all as malignant or as likely to become so. I have at least learned my own fallibility in the diagnosis of lesions of this kind.

On the other hand, there have been many cases that I regarded as malignant which were in reality benign. In one case I agreed with the operator in the diagnosis of a malignant tumor of the femur, only to find after amputation at the hip joint that the growth was not in reality malignant, but a disease of the bone which made it extremely fragile. During the manipulations of the operation the other femur, which was over the end of the table, broke; and the patient was left with but one leg, and that a broken one.

In following up the malignant cases at the Massachusetts General Hospital for ten years I found not a few instances in which the disease had been diagnosticated as hopeless cancer, but in which the patient had recovered entirely either spontaneously or under medical treatment.

In abdominal surgery, the errors in diagnosis have been numerous, and in some instances costly. One frequent source of error is in the diagnosis of pregnancy. The inability to distinguish between a pregnant uterus and other tumors of the abdomen would seem to be inexcusable. As a matter of fact, however, it is at times extremely difficult, if not impossible, to make a distinction. In some cases I have failed to recognize pregnancy, even with the tumor in my hands. Once, after the removal of a large right ovarian tumor, I found what I supposed to be a left ovarian tumor. In trying to tap it—the custom in those days—I discovered that it was a pregnant uterus. The Fates in this case, however, were propitious, for the woman lived and was delivered at full term of a healthy child.

The most prolific source of error in acute disease will be found in the prognosis of acute abdominal infections and other acute abdominal emergencies in which the patient's life depends on the promptness of applying the remedy. I have referred to these errors as costly ones, not because they are in the long run any more fatal than errors of diagnosis, but because they are likely to be so quickly fatal. The postponement of surgical remedies in acute abdominal infections like appendicitis and cholecystitis; in perforations of the alimentary canal; in twists, intussusceptions, hemorrhages and rupture of abscesses—the putting off of explorations on the strength of a faulty prognosis—has been the most disastrous of all.

In the actual performance of the operation, a rigid self-criticism always reveals errors of technic more or less important. Fortunately, technical errors—unless they are essentially irremediable—do not seriously affect the prognosis. From time to time, however, errors purely technical—errors in anatomy or in asepsis—have compromised fatally the result of the procedure. I recall instances in which operations progressing in the most satisfactory manner have suddenly—by the surgeon's failure to recognize and avoid such structures as the ureter, the intestine, the facial nerve or the recurrent laryngeal—placed on him a burden of chagrin, or even remorse, which was, indeed, hard to bear.

To these errors of diagnosis, prognosis, indications, technic and after-treatment, one must add such things as fatal capillary hemorrhage in cases of jaundice; wound infections in which the most rigid review of the case fails to show any technical error; sudden deaths from pulmonary embolism, from intestinal obstruction, from ileus. I have had, too, in my experience, such unusual disasters as the suicide of a patient convalescing from appendicitis, a suicide after gastrostomy for dilatation of the esophagus.

These calamities—which are only a few of the many that beset the patient from the moment the anesthetic is begun until he has fully recovered from the operation,

and even to his dying day—make a list of possibilities so long that in the simplest case one can not but feel the heavy load of responsibility. Even after a perfect convalescence patients have died suddenly. The death may have apparently no connection with the operation. I recall the case of a patient who died four weeks after hysterectomy while being fitted with an abdominal supporter. At the autopsy nothing abnormal could be discovered.

All surgeons are liable to error not only in diagnosis, but in the performance of operations based on the diagnosis. Such errors must always be expected and be included in the contingencies of the practice of medicine and surgery. Doubtless many of my hearers can recall cases of their own in which useless—or worse than useless—operations have been performed. If, however, serious operations are in the hands of men of large experience, such errors will be reduced to a minimum.

In the beginning of abdominal surgery the mortality of the great operations was high, as we all can remember. The individual surgeon, however, soon acquired a skill in technic which rapidly reduced his mortality. The deaths in hysterectomy, for instance, have been reduced from 30 or 40 per cent. to about the mortality of ordinary childbirth. One who has operated in a large number of cases of this kind can predict with considerable certainty the outcome of his case. If, however, we could get the general mortality of hysterectomy to-day, we should find, I fear, that in the community as a whole the mortality is no less than it was in the beginning. This is because men who are not fitted for the responsibilities of this grave operation are willing to accept them. Not only do inexperienced men undertake without hesitation this often formidable procedure, but they advise the operation when it is unnecessary. So it is in many other abdominal operations. I have known a man to open the abdomen for some simple cause, to do damage to the intestine which he could not repair, to close the wound and send the patient to bed, knowing perfectly well that she must die. Such things are hardly conceivable, but they are nevertheless true.

In Europe I once saw a brilliant operator of worldwide reputation remove, with the Fallopian tube, a section of the sigmoid flexure. The blunder was not discovered until the specimen had been removed, but the surgeon knew enough to see his error and to repair it. I once was in such a tangle of adherent and obstructed intestines that I was unable to recognize the distal loop, after separation of the proximal. I was able, however, to extricate my patient from an apparently hopeless situation. Every proposed abdominal operation presents possibilities of error and disaster which are appreciated, feared and provided against in proportion to the operator's experience. *Facilis descensus Averno . . . sed revocare gradum . . hic labor est.*

In fractures, especially, one sees the evil results of ignorance and inexperience. The expert surgeon devotes much of his time to the correction of deformities and delayed unions. He is pestered by appeals to testify in court in the defense of physicians, even when the treatment of fractures has been good. He can not but feel, however, that much is asked of him when he views some of the cases the treatment of which he is requested to defend. I am not sure that suits for damages against physicians—like suits against corporations—unjust as most of them are, do not tend in the long run to work out problems such as that which I am considering: a strict pecuniary accountability for bad results is often the only argument to which inexperience and overconfidence will yield. The trouble is that the dissatisfied layman, the unscrupulous lawyer, the malignant witness, and the ignorant jury make a combination sufficient to blast the best reputation and wreck the fairest cause.[1]

Surgeons of the greatest skill and experience feel more anxiety in the treatment of fractures than in almost any other form of injury. Few can without humiliation review their results.

The tendency at the present time is and should be toward specialization in the treatment of fractures. In cities, and, in fact, in all communities, it would, I am sure, be an advantage if the treatment of fractures were placed in the hands of men who have a special aptitude for this branch of surgery. The orthopedic surgeon is by his training accustomed to the making and the fitting of apparatus; and the results in fractures depend very largely on the way in which bones are held by apparatus in proper position after once they have been put there. At the Massachusetts General Hospital fractures of the jaws have for many years been referred to the dental school, and fractures of the nose to the department for the nose and throat—much to the advantage of the patient. Would it not therefore be wise if fractures in general were regarded as a branch of orthopedics?

With the great increase in the number of surgical operations, the discontented are beginning to bring actions against physicians for bad results in fields of surgery other than that of fractures. Hence, although malpractice suits are, as I say, not common, yet the number of complaints is greater every year. I have known suits to be brought for various reasons—for alleged negligence in leaving gauze in the wound, for operation without the patient's understanding or consent, for abdominal fistulæ, for burns, for postoperative hernias and the like. In one instance a surgeon was actually sued because he advised against the removal of a uterine fibroid; in another case damages were claimed because a surgeon overlooked a splinter of wood in a boy's neck; in still another, because amputation was performed on a minor without the consent of the father. Suit was brought in one case for pressure sores following the application of plaster of paris.

The cases that come to trial are the ones that we hear of: doubtless many claims for damages are settled out of court. Whether the recent introduction of insurance against claims for damages will increase the number of suits or not, is thus far a matter of opinion. When it becomes generally known that corporations stand by physicians, malpractice suits will, I think, increase, especially if the insurance companies make settlements favorable to themselves, without the consent of the physician. On the other hand, a determined and obstinate defense seems a real protection.

As I have said, the responsibilities of surgery are being brought home to the physician more forcibly by claims for damages than by anything else. Possibly this holding of the physician liable will increase his sense of responsibility to such an extent that he will hesitate to undertake operations for which his educa-

1. Almost as I am writing these words, I am asked to defend a physician of whose treatment of a Colles's fracture only two criticisms can be made: one, that the fracture was not reduced under ether; the other, that the arm (in the case of a woman of sixty) was kept in splints too long. Nevertheless, there are permanent deformity, impairment of wrist motion, and stiff fingers. The physician felt confident that he could treat a little thing like a Colles's fracture as well as anybody else, even in a 'large community, where the standard of skill was high. In consequence, the patient is dissatisfied, the physician worried, and the surgeon annoyed.

tion has not fitted him; but until some such restraining influence shall have made itself felt, we shall continue to meet with inexperienced men who think themselves competent to treat not only fractures, but all surgical lesions, including those of the abdominal cavity.

Many physicians send patients for diagnosis and opinion as to the advisability of operation without telling the consultant that they themselves are to perform the operation. The diagnosis is made and the operation perhaps recommended, when it appears that the operation is to be in incompetent hands. A disagreeable duty devolves on the consultant. His advice should be conditional that it be carried out only by the competent. Many operations, like the removal of the vermiform appendix in the period of health, the removal of fibroids which are not seriously offending, the removal of gallstones that are not causing symptoms, are operations of choice rather than of necessity; they are operations which should never be advised unless they are to be performed by men of the greatest skill. Furthermore, many emergency operations, such as the removal of an inflamed appendix and other operations for lesions which are not necessarily fatal—should be forbidden and the patient left to the chances of spontaneous recovery, if the operation proposed is to be performed by the incompetent.

Then, too, many physicians are so inexperienced in the after-treatment of patients that the result is, from this fact, likely to be less favorable. Unless, for example, the after-treatment of difficult gall-bladder operations is to be in the hands of competent men, the surgeon should be unwilling to operate. In such cases he should insist that the patients put themselves under his personal supervision.

The responsibilities of making the diagnosis, of advising the operation and of performing it, and of the after-treatment are great—much greater than even those who practice surgery exclusively, and who therefore understand the difficulties, realize. Even less impressed by these responsibilities are the patients themselves and their friends. Let us consider the operation of appendectomy in the "interval," for example. How common it is for the lay journals to say that the operation is a simple one—so simple that any physician can easily perform it! The needlessness, the simplicity, the fees of the operation are frequently the subject of their jokes. The operation for appendicitis usually is, as we all know, an operation that is easily and quickly performed, and it is almost always successful. At times, however, it is extremely difficult and dangerous, and at rare intervals fatal. The success may depend on some trivial thing, the importance of which can be realized only by men of the greatest experience. In many mechanical things the ultimate results depend on slight causes acting through a long period of time. The winning crew at the end of four miles succeeds in crossing the line a few feet ahead of the defeated crew because of some trivial thing in which that winning boat is superior to the defeated boat. A record of a thousand successful operations for appendicitis surpasses a record of nine hundred and ninety successful operations because of some slight superiority in technic. It would be practically impossible to say that one method is superior to another, and yet it would be absurd to deny that superior results are owing to the best judgment and the best technic. The time chosen for the operation, the kind of incision, the method of treating the stump, the establishing of drainage, are things apparently of little importance; and yet they make the difference of the ten cases in a thousand; they may determine in the particular case whether the patient will or will not die.

Many years ago, before the days of aseptic surgery, a surgeon well known for his painstaking work and good results, said to me, when I was his surgical house pupil at the Massachusetts General Hospital, that the life of a surgeon was one of great anxiety and occasionally of much chagrin and unhappiness. He was at this time depressed by the death of a patient, a young woman with everything to live for—husband, children, riches—on whom he had operated for the repair of a lacerated perineum. If such things happened frequently, he said, the life of a surgeon would be unendurable. I have always remembered this remark, but I did not at that time realize its full significance. In estimating the weight of the responsibilities which rest on the surgeon, I have often recalled this case. "We must remember," Dr. Hodges used to say whenever there occurred an unexpected disaster which could be neither explained nor provided against, "that this is one of the contingencies of surgery." A death under the anesthetic, an uncontrollable hemorrhage, a pulmonary embolism, a fatal wound infection, not to mention such rare occurrences as homicidal and suicidal manias, and omitting entirely the disasters peculiar to each surgical procedure, these things will occur in spite of every precaution, and they are the contingencies of surgery—possibilities which attend even the most trivial surgical procedures.

With the advance of modern surgery, many of the horrors of the old days have been obviated, it is true, and the occurrence of others has been rendered infrequent; but there still remain, in all surgical cases, possibilities of disaster which the largest experience and the greatest care can not prevent; and we must not in any case, even the simplest, forget these possibilities. With the rare and unavoidable disasters, and with the common and avoidable ones—any of which, through errors in human judgment, may unexpectedly occur—the modern surgeon, who has under his care so many cases, is indeed fortunate if he has not at every moment some disturbing case and in every year some deplorable calamity. The surgeon reviewing his years of active practice can not but be impressed by the responsibilities of his profession. He recalls the frequent misgivings with which, on the strength of his fallible opinion, he has advised and performed operations; the excitement of a critical operation and the deep breath of thankfulness when he has succeeded in averting some grave complication; his forebodings—so frequently instinctive— of impending disaster, and the sinking of the heart as his forebodings become realities; the too often useless struggle against overwhelming odds; the distressful death; the severe self-criticism and biting regrets. And is not the surgeon, appreciating his own unfitness in spite of years of devotion, in the position to condemn those who lightly take up such burdens without preparation and too often without conscience?

The responsibilities of surgery are not, however, always appreciated even by those who are by education and experience qualified to bear them. I have heard such men say that the removal of an appendix in the so-called "interval" is a perfectly safe operation; that no surgeon ought ever to have a death after removal of the appendix in health or after any similar operation. It seems to me that one is indeed fortunate if he can look on the operation of appendectomy in the period of health with perfect equanimity, for it is in just such cases as

V 45
1905

these that I find the responsibility heaviest. When a patient has acute appendicitis with general peritonitis, the responsibility in operating is slight: the operation must be performed. There is no greater responsibility in this decision than there is in the decision of going to rescue a drowning child. When, however, the surgeon takes a patient who is in comparatively good health, makes him unconscious, opens his abdomen and removes his appendix, then the feeling of responsibility is to be compared only to that which one would feel if he were to throw a child into the sea and afterward jump overboard to save him!

From the moment the anesthesia is begun, to the time when the convalescence is complete, the surgeon will be held responsible for every complication and for every disaster—for acts of anesthetist, assistants and nurses.

In view of these facts, who should perform surgery? How shall the surgeon be best fitted for these grave duties? As a matter of right and wrong, who shall, in the opinion of the medical profession, advise and perform these responsible acts, and who shall not?

Surgical operations should be performed only by those who are educated for that special purpose. What, then, is the education that will fit a man to become a competent surgeon, and what are the qualities that go to make a good surgeon? Some men have good judgment in the advising of operations, with but little skill in performing them; others have bad judgment in the advising of operations, but splendid technic in performing them; still others are not only poor diagnosticians and men of bad judgment, but they are clumsy operators.

In considering these questions, I shall ask and try to answer another: What should be the education of the surgeon?

Important, if not essential qualifications for the surgeon, are strength, endurance and hopefulness. The surgeon should have the power of being cheerful under the most discouraging conditions; a persistence — it might almost be called an obstinacy—which will under no circumstances fail; a determination never to give up so long as the breath of life is in the patient. No matter what the diagnosis may be, no matter what the outlook may be, the only excuse for giving up the fight in surgery is either the death of the patient or the discharge of the surgeon. Human fallibility is great; and if the surgeon carries out this general rule of never giving up, he will see occasionally a surprising—even incredible—recovery.

Manual skill is of great help to the surgeon, especially in diseases which require the use of apparatus, as in orthopedics and fractures. The mechanical training of candidates is not sufficiently insisted on; yet the surgeon's reputation very largely depends on the actual performance of an operation. Mechanical skill in operating is not, however, to be compared with intellectual skill; but in the case of an intelligent young man the decision between surgery and some other profession might be dependent on mechanical ability.

The student should be thoroughly trained in mechanical work, he should learn the use of tools of all kinds—machinists', carpenters' and forging. On the rapid and skillful use of needle and thread many an operative reputation has been founded. Mechanical skill alone, however, is of little value in the equipment of the surgeon without those finer mental qualities which enable him to make, from intelligent observations, accurate decisions.

Some men are remarkably keen in this respect. A man may be able to see things and to describe them, but may not be able to tell the difference between two things which are very nearly alike. In the case of twins a man might not be able to describe the difference, no matter how careful an observer he might be (barring some such distinguishing mark as a scar), but he might be able always to tell them apart. So it is in distinguishing between certain crystals—for instance, between the crystals of beryl and the crystals of quartz—when perhaps the characteristic angles of crystallization are not to be seen. A crystal of beryl which could not by a written description be made distinguishable to the ordinary observer from a crystal of quartz could be instantly told by an experienced mineralogist. Between two affections which are nearly alike the superficial observer would see little if any difference. It would be hard for a beginner or for a superficial observer to tell the difference between the tumor of an acute appendicitis and the tumor of a new growth at the ileocecal valve, if no history of the case were given; or to distinguish a uterine fibroid and a solid tumor of the ovary, a salpingitis and an appendicitis, a sarcoma of the breast and a cystic tumor of the breast, smallpox, chicken pox, smallpox and measles, and so on. Probably very few men could describe the difference between these affections, and yet an experienced observer would be able to tell at a glance which was which.

I have been interested in noting how the minds of students work, as shown at examinations and in the study of clinical cases. One is almost able to say: "This student will make a successful diagnostician, and his advice will always be good; that student will never amount to much as a diagnostician." In a recent examination at the Harvard Medical School the advanced students were asked to give the diagnosis, the prognosis, and the treatment in eight carefully described cases taken from my note-books. In some of these cases there had been a great difference of opinion among physicians of the largest experience; yet some of the students, interpreting the histories properly and drawing the correct conclusions, gave the right answer in every case. Many of these students did not show the learning of others who drew wrong conclusions in every case. The students whose deductions were in every case correct will without question make more successful practitioners than the students who, though exhibiting much more learning, picked out the unimportant features in the histories of the cases, and on these unimportant features based correct deductions, which were, as to the real lesion, always wrong. This examination in clinical surgery brought out in strong light the qualities necessary for the best equipment of the surgeon—namely, the power of grasping the essential features of a case and of basing on such evidence conclusions almost invariably correct.

Before studying medicine the student should be well grounded in botany, chemistry and physics. His education in the medical school, however, should be principally in what might be called the A B C's of medicine: anatomy, physiology and pathology. Most of his time should be devoted to the study of the human body in normal action (physiology), in abnormal action (living pathology); and to the study of the dead body (normal anatomy), and of the diseased dead body (pathologic anatomy). The most important thing is the study of pathology on the living. This branch of education, however, can not be extensively studied at the medical school or in the hospital. The surgeon begins it in the med-

ical school, but he must continue it later at every possible opportunity. The allied sciences—chemistry, bacteriology and the specialties of medicine and surgery—should be a part of his education; but, as I have said, most of his time in practice should be devoted to the study of the healthy living body, the healthy dead body; the pathologic living and the pathologic dead.

In my recent teaching I have made use of the autopsy for the education of the students' touch, especially in abdominal diseases in which the surgeon is frequently obliged to depend on the evidences of his fingers to decide for continuance or abandonment of his operation. The history is read and the case is discussed. The abdominal incision is next made as if for operation. The student is then required to explore the abdominal cavity with his hand, and to record his opinion as to the lesion present and as to the condition of all the abdominal organs. If no disease is diagnosticated beforehand, he is required to give his opinion as to the condition of each organ. To some extent the diagnosis may be made on the pathologic appearances seen at autopsy; but the pathologic appearances during life are so different from those after death that the surgeon who depends exclusively on experience gained at the autopsy table is liable to err.

A thorough knowledge of practical anatomy, such as was insisted on in the preanesthetic days when the success of the operation was largely a matter of speed, should still be insisted on as the first and most important equipment of the operating surgeon. Not that the extraordinary skill and rapidity of some of the operators of those days is essential when anesthesia and asepsis make deliberate and careful dissections possible, yet there is, in my judgment, among even the experienced operators, a deplorable ignorance of normal anatomy. The freedom and rapidity with which cuts are made in close proximity to important structures is to the anatomist appalling. It explains, however, the frequency of the so-called "accidents" of surgery: urinary and fecal fistulæ, paralyses and hemorrhages. I would advise the surgeon, both in preparation and in active practice, to make use of every opportunity for dissection; to become so familiar with the human body that he can not fail to recognize every structure the moment the smallest portion of it is uncovered; to be able to proceed directly on his operative route without being obliged to halt for a moment to study his landmarks. Normal anatomy is quite as important in operative surgery as pathologic anatomy is in the understanding of disease. Anatomy should be, if not first, a strong second in the education of the surgeon.

The chief preparation of the surgeon, after the acquisition of the knowledge given him in his medical school courses, must be in direct contact with patients. The medical school will have qualified him to observe the normal working of the human body (physiology), the structure of the body (anatomy), the results of disease (pathology as illustrated on the dead). The courses will have given him an opportunity to see, in a very limited number of cases, the pathology of the living (symptoms as expressed at the bedside). He will have learned the theory of repair of wounds—inflammation, suppurations and all the processes which are erroneously spoken of as surgical pathology. In the ordinary courses of study during his four years at the medical school he will have a very limited experience. In order to become a surgeon qualified to bear the responsibilities of our profession, he will require an additional training, and that training must be thorough and prolonged. He must be brought into contact every day with surgical diseases in their clinical manifestations; and he must learn, by the observation of an enormous number of cases, to distinguish between diseases so closely resembling each other that he could only with the greatest difficulty describe the differences in words. It is first on this clinical experience that he must rely, and secondly on the observation during operations of the connection between symptoms previously noted and the lesion actually found. It follows that the best preparation that a man can have for becoming a practical surgeon is in the position of assistant. As a medical student his opportunity for observation is at the clinical work. At a distance, perhaps, or near at hand, as the case may be, he observes the examination of the case and the operation on the patient. In as many instances as possible he is required to take his own history and to make his own examination. If he gets an appointment as assistant in a hospital he has an opportunity of observing patients and studying them as carefully as his time permits, of assisting at operations and there seeing the lesions, of seeing in the autopsy room—in cases in which the result is fatal—the pathologic appearances. This is the best preparation that the medical schools and the hospitals offer. After this a course of study in Europe broadens the student's view and increases his experience.

Is this enough to round out a man's education so that he may assume the responsibility of surgery? This is so much better than the education of most men who practice surgery that one is inclined to answer in the affirmative; but I am considering the best education for the surgeon. I have no hesitation in saying that the proper fitting of a man for surgical practice requires a much longer experience as student and assistant than the most exacting schools demand. A man should serve four, five or six years as assistant to an active surgeon. During this period of preparation, as it were, as much time as possible should be given to observing the work of the masters of surgery throughout the world. Nothing broadens a man like observing the work of others. One should never give up visiting the clinics of the masters, no matter how experienced he may be. A man can not but become narrow in his views and limited in his resources, especially in emergencies, if his work has been confined to his own special clinic. Yet, on the other hand, is there not a danger that one may become a chronic student, an imitator of others, without originality or initiative? I believe that there is. I have seen a man hesitate between the teachings of Paris, Berlin, Vienna and London until he had to be prompted by his house surgeon into an American—at home—every-day successful procedure!

The importance of laboratory work—the so-called research work—in preparing a man to become a surgeon, is great. The necessity or the advisability of continuing in the work of active laboratory research admits of doubt. Certain qualities are essential to make a man a good worker in research. It requires quite different qualities to make a good surgeon. The fields are both infinitely broad; and I doubt whether a man can contribute much of value in the field of original research—in the sense of scientific research in the laboratory—and at the same time accomplish much in the field of practical surgery. The clinical man sees every day opportunities for research; problems arise which are of the greatest interest. It is for him to suggest lines for ex-

perimental work, but it is not for him to carry out the actual work itself.

In the larger sense, however, the surgeon is engaged in the work of original research. In the clinical manifestations of disease he alone sees the connection between cause and effect. Suggestions as to treatment, symptomatology, prognosis and operative methods occur to him in the course of his daily work; and practical advance in the treatment of disease comes mainly from the results of his observations at the bedside and at the operating table.

How may it best be brought about that surgery shall be in the hands of those only who are by education and experience best equipped to practice it?

Is it better to limit surgery to those who are given courses of instruction and degrees designed especially for the education of the surgeon, or would it be preferable so to educate public opinion that only those could be called on to practice surgery who were known to be well fitted for it?

The trouble with the latter question is that the public is easily deceived in medical matters. Nevertheless there is, I think, a strong public opinion in favor of the practitioners who are known to be surgeons of skill and experience. It is on this power of discrimination between the evil results and the good, and on the dependence of these results on skill, that we must chiefly rely in creating a sound public and professional opinion in favor of special experience and skill in the advising and in the performance of surgical operations, and in the practice of surgery in general.

Original Articles

A CASE OF SYSTEMIC BLASTOMYCOSIS, WITH BLASTOMYCETES IN THE SPUTUM.

DANIEL N. EISENDRATH, M.D.
AND
OLIVER S. ORMSBY, M.D.
CHICAGO.

Through the efforts of Drs. James Nevins Hyde and Frank Hugh Montgomery and other observers, cutaneous blastomycosis is now generally recognized as an entity. The number of reported cases of systemic blastomycosis being few, it seems justifiable to report more or less fully new cases as they occur, so that by a study of the entire group it will be possible definitely to place the disorder in its proper position in medicine. There are now on record four cases of systemic blastomycosis, in which the causative organism appears identical. These were recorded by Busse and Buschke,[1] Montgomery and Walker,[2] Ormsby and Miller[3] and Cleary.[4] Three of the cases were in Chicago, and two of these occurred in the practice of Drs. Hyde and Montgomery. Another case which closely conforms, and which by some observers is classed here, was that reported by Ophüls and Moffitt[5] of California. In these various cases, similar symptoms were presented before death and similar findings were made postmortem, yet marked differences also occurred. In the various cases, the larynx, trachea, lungs, pleura, myocardium, liver, spleen, pancreas, kidneys, adrenals, mesentery, lymph glands, bones, joints, subcutaneous and cutaneous tissues were the seat of the lesions, the organism being found in all these localities. The microscopic findings in all of these cases were similar, differing chiefly in extent of distribution or destruction. The process often resembled pyemia, multiple abscesses occurring in various organs and tissues of the body. In one case (that of Ormsby and Miller), the usual picture presented in the skin by the chronic, purely cutaneous cases was almost entirely absent, only one lesion possessing this resemblance. In another (that of Cleary), no cutaneous lesions were present. These cases resemble tuberculosis, both clinically and pathologically. This is evident from the findings in the past. The miliary tubercles found in the lungs, liver and elsewhere have a close resemblance to the miliary tubercles of tuberculosis in the same situations; and the chief responsibility of those recording cases in the future will be to eliminate the presence of tuberculosis.

We are indebted to Dr. M. L. Blatt for aid in procuring material for histologic study, and to Dr. H. L. Wolf, house surgeon at Cook County Hospital, for assistance in the work in this case.

Patient.—Polish laborer, aged 33, married and has two healthy children.

History.—His illness began in February, 1904. He was admitted to Cook County Hospital in February, 1905, and assigned to the service of Dr. Eisendrath. He speaks no English, so a satisfactory history through an interpreter was hard to obtain. It is probable that he has had the usual diseases of childhood. He denies venereal infection; he has been a moderate smoker of cigarettes, and drinks occasionally. His surroundings at home were most insanitary.

Present Illness.—The present disease began in February, 1904. He has given two versions of the beginning. The following was the last and seems most reliable: He states that the first noticeable departure from his usual good health consisted in a feeling of discomfort involving the chest on the right side, extending through from front to back. This lasted for a time, and, in fact, is still present, being better and worse at intervals. In June, four months from the beginning, his first cutaneous lesion appeared. This was located below the left ankle and extended down to the heel, and eventually became a little larger than a dollar. Shortly afterward the other lesions appeared, but it is impossible to tell their exact mode of development. In addition to this area on the left leg, the right leg had several large lesions, also the right and left forearm, and the face, chin and neck, especially on the right side (Fig. 1). About November, 1904, he suffered great muscular weakness, and marked swelling of the feet and ankles occurred. This gradually increased until he was wholly unable to work. He stopped work in December. He stated that with the onset of the original pain he employed a physician for two months and was benefited by the treatment. Something was applied to the skin by the physician which made the skin sore, but this soon healed, and was entirely different from the cutaneous lesions present on his admission to the hospital.

Examination.—On his admission to the hospital in February, 1905, he presented lesions on all the above-mentioned areas, and was very much emaciated, pale, anemic, exceedingly weak and had some elevation of temperature. Marked edema was present in the ankles, feet, face and arms. His nails were clubbed, and moderate inguinal adenopathy was noted.

Cutaneous Lesions: There was present on the left leg, below the ankle, a lesion about the size of a silver dollar. One on the right leg (Fig. 2.), on the lower third, occupying the outer and posterior surface, measured about four by two and one-

1. Busse-Buschke: Virchow's Arch., 1895, vol. cxl, p. 23; Verhandl. der Deutschen Dermatologischen Gesselschaft; Sechester Congress, 1899, p. 181.
2. Walker, James W., Montgomery, Frank Hugh: "Further Report of a Previously Recorded Case of Blastomycosis of the Skin; Systemic Infection with Blastomyces; Death; Autopsy." THE JOURNAL A. M. A., April 5, 1902.
3. Ormsby, Oliver S., Miller, H. M.: "Report of a Case of Systemic Blastomycosis, with Multiple Cutaneous and Subcutaneous Lesions." Jour. of Cut. Dis., March, 1903.
4. Cleary, J. H.: "A Case of Generalized Blastomycosis." Trans. Chicago Patho. Soc., vol. vi, No. 5, May 9, 1904, and Medicine, November, 1904.
5. Ophüls, W., Moffitt, H. C.: "A New Pathologic Mould." Philadelphia Med. Jour., 1900, v. 1471. Proc. of the Chicago Med. Soc., Illinois Med. Jour., vol. vii, May, 1905, p. 454.

half inches. This was oval in shape, and was joined below by a similar lesion, of about the same size, situated over the external malleolus. Two or three similar but smaller lesions were in the neighborhood. All these lesions were quite superficial, the larger part of each being an ulcer, crust covered in places, open in others. There was little induration, but considerable sanguinopurulent discharge. The edge of the ulcer was slightly elevated and presented a bluish-red halo, in which there were located a few miliary abscesses. In some parts of the area a papillomatous condition was present. The lesion on the arm was a subcutaneous nodule, which later softened and was incised, and from the sinus left after this procedure, and from both the lesions on the legs, the organism of blastomycosis was demonstrated by us in pus before the Chicago Medical Society,[6] March 8, 1905. There was also present a large swelling on the left forearm, which apparently involved the whole circumference. It began about two and one-half inches below the elbow joint and extended down the forearm about four inches. It involved both sides of the forearm, and suggested the possibility of bone involvement. In a skiagraph of this lesion the bone appeared normal. This swelling was later incised and the same characteristic discharge released. Material from this swelling was inoculated into two guinea-pigs on April 26. There is still involvement in this area. The lesions on the face (Fig. 1), on account of the different anatomic site, presented a slightly different picture. Here they protruded more extensively above the level of the skin and were papillomatous; some were even verrucous. There was much discharge and marked crusting. The part chiefly involved was the right side of the face, the right side of the neck and the lower lip, extending to the vermillion border.

Bacteriologic Examination.—On March 22 pus was removed from a subcutaneous unruptured abscess situated on the left forearm and inoculated on various media and later in animals. Pure cultures of blastomycetes grew on all the tubes. This pus was stained for tubercle bacilli with negative results. Blood cultures have been negative, as has also examination of the urine relative to blastomycetes. Albumin and casts were present in the urine, however. On March 22 tuberculin was given with negative results. No tubercle bacilli have been demonstrated in sections or pus.

Course of the Disease.—Although the patient constantly denied having a cough or expectoration of any moment, and although his attendants at the hospital had not noticed these symptoms, on April 26 we were able to collect a large amount of blood-stained, mucopurulent sputum, in which the organism was plentifully found, as is well shown in Figure 3. On May 1 the following physical findings were recorded by the house physician, Dr. Morrell:

"Liver and spleen not palpable. Abdomen tympanitic: Lungs: Right apex and upper lobe on right side dull posteriorly. Bronchophony and bronchial breathing present. Lung expansion practically absent. A few râles present in the right lower lobe near the axillary line. The left lung hyper-resonant except at apex."

During his four months' sojourn at the hospital, his temperature ranged from 98.6 to 102.8; his pulse from 88 to 116; his respiration from 20 to 28. The latter half of the time the temperature was considerably lower. As a rule, there was an exacerbation each evening. Under large doses of potassium iodid internally, with radiotherapy, antiseptic dressings and surgical interference locally, marked improvement occurred.

On July 7, when the patient left the hospital, he was much improved in every way. The cutaneous lesions were nearly all healed, he had gained in weight, and had but little fever. On leaving the hospital he passed from our observation for a few weeks. He had stopped the treatment, and when seen by us at his home, five weeks later, he had suffered a relapse. He was suffering with marked pain in the right chest, several cutaneous lesions were active again, and the sinuses leading from the deep lesions on the forearm had reopened.[7]

HISTOPATHOLOGY OF A CUTANEOUS LESION.

As this case presented the histologic picture common to this disease, a detailed description is not given here. Outside of the chief area of involvement there is vascular dilatation and perivascular cellular infiltration, scattered irregularly through the entire depth of the corium. Over this region the epidermis is unaltered, except for slight hyperpigmentation here and there. There is also slight edema of the collagen. Approaching the diseased area, the cellular infiltration increases until in the center there is a large, fairly well-defined area of intense infiltration. The epidermis over this region shows marked hypertrophy, which is very characteristic of this disorder. With low power (Fig. 4) one is struck with the marked resemblance this picture presents to lupus vulgaris—the marked epidermal hypertrophy; the intense cellular infiltration, containing groups of giant-cells; the comparative absence of collagen and elastin, etc. Scattered all throughout, however, is the double-contoured organism of blastomycosis, occurring chiefly in budding forms, and practically every giant cell contains two or more of these organisms (Fig. 5). In addition to giant cells, there are some polynuclear cells, very many polymorphonuclear leucocytes, some mononuclear leucocytes, some plasma cells, and many connective tissue cells. No tubercle bacilli have been found.

CULTURES AND ANIMAL EXPERIMENTS.

The first cultures taken at Cook County Hospital on March 8 were made from open ulcers and a sinus on the forearm, and although the organism was fairly abundant in smears made from this pus, it failed to grow on the media. On March 22 pus was removed from a subcutaneous abscess on the left forearm, which was inoculated on various media. On March 28, six days after this inoculation, growth was plainly visible, and after this time the cultures grew rapidly. These proved to be pure cultures of blastomycetes. The organism both in the tissues and pus and on media differed in no essential particular from those described by Montgomery[8] in his report of three years ago, so only a brief description is given here. In the pus they occurred as circular and budding forms, having a double contour and the usual refractile capsule. On media the growth varied. It presented a moist, pasty surface on glycerin-agar (Fig. 6), with at times a wormy appearance, or else presenting large folds and depressions. Microscopically, these cultures showed many oval and circular organisms, some budding ones and much mycelial formation, the latter being both coarse and fine and containing sporules (Figs. 7 and 8). Lateral conidia occurred. On glucose-agar (Fig. 9*) the growth was more dry, white, and presented aereal hyphæ; and microscopically, there were fewer circular and budding organisms and more fine mycelia. On both glucose and glycerin agar the media were penetrated to a considerable depth in a semicircular manner.

On blood serum the growth was also moist and pasty,

6. Chicago Med. Soc., Illinois Med. Jour., vol. viii, May, 1905, p. 454.

7. Sept. 15, 1905. The patient re-entered the hospital a few days ago with symptoms of a dorsal spondylitis which is undoubtedly another manifestation of the blastomycetic infection.

8. Hyde, James Nevins, Montgomery, Frank Hugh: "Cutaneous Blastomycosis: A Summary of the Observations of James Nevins Hyde, A.M., M.D., and Frank Hugh Montgomery, M.D." Rush Medical College, Chicago. THE JOURNAL A. M. A., June 7, 1902.

EDITOR'S NOTE.—By error on the plate of illustrations, Figure 9 is called a *microphotograph* instead of a photograph.

V 45 1905

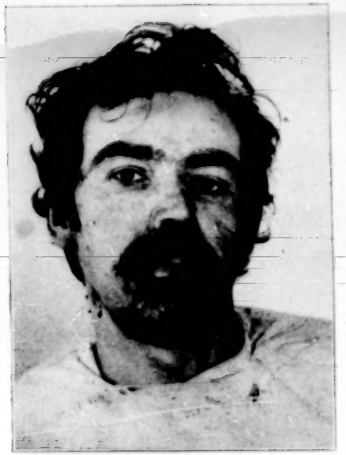


Fig. 1.—Cutaneous lesions on lower lip, chin and neck.

Fig. 2.—Cutaneous lesions on leg and ankle.

Fig. 4.—Microphotograph. Cutaneous section showing marked epidermal hypertrophy and giant-cells (low power).

Fig. 3.—Microphotograph. Smear from sputum mounted in 1 per cent. potassium hydrate solution, showing circular and budding organism (× 1200).

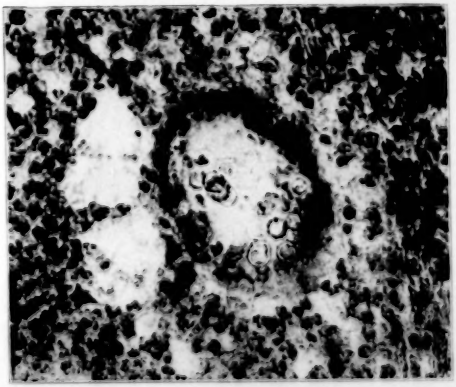


Fig. 5.—Microphotograph. Higher magnification of Fig. 4, showing the organism in a giant-cell (×600).

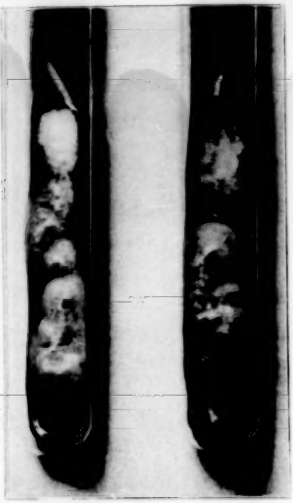


Fig. 6.—Photograph. Growth of organism on glycerin-agar, five weeks old, obtained from pus from an unruptured subcutaneous abscess on forearm.

Fig. 7.—Microphotograph. Smear from growth on media five weeks old in 1 per cent. potassium hydrate solution (low power).

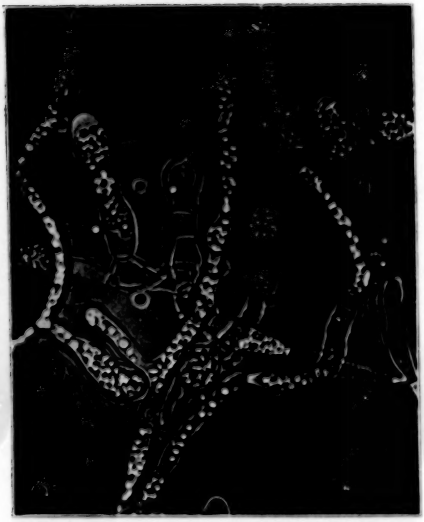


Fig. 8.—Microphotograph. Higher magnification of Fig. 7 (× 1200).

Fig. 9.—Microphotograph. Same as Fig. 6, except growth here is on glucose-agar.

Fig. 10.—Subculture of organism on glycerin-agar, originally from sputum.

and presented a greater proportion of the circular and oval organisms. The cultures taken from the cutaneous lesions, the subcutaneous abscesses and the sputum (Fig. 10) all appeared similar. Subcultures had to be made to obtain pure cultures from the sputum. On April 26, two guinea-pigs were inoculated subcutaneously with an emulsion of pus and granulation tissue, removed from the forearm by incision into an unruptured, deep-seated abscess. Both these animals developed a local lesion of blastomycetic infection at the point of inoculation and surrounding it for half an inch in each direction. These lesions remained for a few weeks, then healed, leaving only a slight atrophic area. On August 12, one of these animals was chloroformed and a thorough postmortem examination made. The subcutaneous fat was intact, the glandular system negative and all the internal organs healthy. There was some local change where the inoculation was made, but no disease or organisms were present. As the other animal inoculated at the same time was healthy and fat, and as more than three months had elapsed since the inoculation, this work in these two animals was negative as to tuberculosis. On May 14, three guinea-pigs were inoculated, one with 15 mm. of the hemorrhagic mucopurulent sputum. This animal was accidentally killed three weeks later by a rat. The postmortem was made by Dr. Adolph Gehrman, who reported negative findings. Had tubercle bacilli been present in the sputum, some evidence of their development would have been evident in the three weeks. A second animal was inoculated subcutaneously with pus previously removed from a subcutaneous abscess in the left forearm. This animal, after three months, is perfectly healthy and is being kept. The third animal received 15 mm. of an emulsion of sterile water and a pure culture of the blastomycetes obtained March 22 from an unruptured abscess on the forearm. This animal was posted August 14, and apparently had overcome the attack, as it was perfectly healthy and no organisms were found in any of the tissues or organs. With negative results from four susceptible animals, such as guinea-pigs inoculated with such likely material as mucopurulent sputum, pus and granulation tissue from an abscess wall, it is probable that no tubercle bacilli were present in this case. The negative findings with the inoculation of the pure culture of the blastomycetic organism is not especially significant, as the guinea-pig is not very susceptible to general infection with this organism, though general infection has occurred several times.

A BRIEF REVIEW OF OTHER RECORDED CASES.

In the first case, that of Busse and Buschke,[1] cutaneous, subcutaneous, visceral and bone lesions were present. Early there formed an abscess on the tibia, from which situation the disease spread to the knee joint. There is uncertainty as to which appeared first, the tibial abscess or the cutaneous lesions. The patient succumbed in from thirteen to eighteen months from the beginning of the disease, having as general symptoms marasmus, irregular pulse and temperature. The organism, which was found abundantly in the pus and tissues, was round or oval and developed by budding. In the second case, that of Walker and Montgomery,[2] cutaneous blastomycosis of several years' duration was followed by systemic involvement. This patient was operated on, curettage and cauterization being employed. Nine days after the operation there occurred elevation of temperature, increased pulse rate and rapid respiration; the appetite failed, emaciation occurred, with dyspnea, the patient dying in forty-three days.

It is interesting to note that this case was under Dr. Montgomery's observation several years before cutaneous blastomycosis was recognized, and was classed by him as an unusual tuberculosis. At the postmortem, Dr. Walker considered the patient had died of acute miliary tuberculosis. Later, both gentlemen, having their attention called to the subject of blastomycosis, recalled this case and investigated their old slides, and independently recognized it as an example of cutaneous and visceral blastomycosis. The organism as seen in the sections was circular or oval and developed by budding. In the third case, that of Ormsby and Miller,[3] the patient's history was suggestive of tuberculosis. It was briefly thus: The patient caught cold, which settled in his chest. He coughed and had some blood-streaked expectoration and became very weak. Two months later the first cutaneous lesion appeared. For a time, improvement in his general condition occurred, then he became pale, emaciated, anemic, had loss of appetite, coated tongue and a foul breath. The urine was negative. The temperature was elevated, pulse rapid and respiration increased. Large numbers of subcutaneous nodules and abscesses and cutaneous ulcers occurred. Physical examination of the lung showed bronchial breathing and other evidences of involvement. Laryngitis was present. This latter proved to be due to ulceration induced by the organism of blastomycosis. Repeated examinations of the sputum were negative as to tubercle bacilli. Tuberculin reaction repeated was negative. In this case, special effort was devoted to excluding tuberculosis. Thorough examination of smears made from pus from the various organs and tissues of the body all failed to reveal tubercle bacilli. Animal inoculation and culture experiments were all negative as to tuberculosis. In all situations large numbers of blastomycetes were always demonstrated. Cultures were readily obtained and animal experiments were successful with the blastomycetes. Drs. Otis and Evans[3] did thorough pathologic and bacteriologic work on this case, and later reported in detail the biology of the organism. From their findings they ruled out tuberculosis. It is a point of scientific interest to note that one of the operators at the autopsy in this case was inoculated with and shortly afterward developed blastomycosis. This organism was found always in the budding form in the tissue and pus, but on media mycelia formed. In the fourth case, that of Cleary,[4] it is interesting to note that special symptoms masked the general infection, so that the diagnosis of blastomycosis was made postmortem. The patient's general symptoms were a cold, cough, mucopurulent expectoration, loss of weight, anorexia, hoarseness and edema of the feet and legs. The urine contained albumin and granular and hyalin casts. The temperature was always subnormal and there were no cutaneous lesions. No tubercle bacilli were found in the sputum. At the autopsy, the usual budding organism was found in the lungs, kidneys, liver, spleen, adrenals and myocardium.

This group of cases resembles closely those cases reported in California and elsewhere under the title of protozoic dermatitis, both clinically and pathologically, one of the main differences being the fact that in the protozoic cases the organism does not reproduce by budding in pus and tissues, but develops by endogenous spore formation. In the case of Ophüls and Moffitt[5] which is

3. Otis, F. J., Evans, Newton: "The Morphology and Biology of the Parasite from a Case of Systemic Blastomycosis." THE JOURNAL A. M. A., vol. xli, No. 18, p. 1075.

classed by some as blastomycosis and by others as protozoic disease, the organism closely resembles in culture the blastomycetes, but in the tissue these develop only by spore formation and not by budding. The clinical and pathologic findings in this case are very similar to the blastomycosis cases.

INFECTION ATRIUM.

In two of the foregoing cases, the lungs seemed to have been the first point infected. In one other the skin was first attacked, general infection following. In the other the question is open as to which was first, the skin lesion or the tibial abscess. In our present case the lungs were apparently attacked first.

REVIEW OF PRESENT CASE.

First. This patient is suffering with a constitutional disease, as evidenced by the clinical symptoms, which show involvement of the lungs, kidneys, skin and subcutaneous tissues.

Second. It seems probable that the lungs were the first point of attack, and they are still markedly involved.

Third. Although tuberculosis in this case is simulated, no tubercle bacilli could be demonstrated, microscopically, culturally or experimentally, and tuberculin reaction proved negative.

Fourth. The organism of blastomycosis has been demonstrated abundantly in cutaneous lesions, subcutaneous unruptured abscesses (in pure culture), and in the sputum.

Fifth. Although the disease responded to, and greatly improved under, potassium iodid, the patient is far from well and future developments will be noted.

Sixth. With the organism from this patient, we have produced only local lesions of blastomycosis, our efforts being directed chiefly to the elimination of a possible tubercle bacillus infection.

PENETRATING WOUNDS OF THE ABDOMEN.*

RANDOLPH WINSLOW, M.D.
BALTIMORE.

Penetrating wounds of the abdomen occur with considerable frequency in civil as well as in military practice, and until recently have been the most uniformly fatal of all injuries. As much of our knowledge of this class of injuries has been derived from the experience of the civil war, in preantiseptic times, so we may expect to revise or to confirm our views on this subject by the experience of the surgeons now engaged with the armies in the far East, when they shall have the opportunity to collate their experiences. My experience in these cases is confined entirely to those injuries occurring in civil life, in which the wounds have been inflicted by pistol or rifle balls or with knives and scissors. The larger number of these injuries are inflicted by bullets, while a large minority are due to stabs. As a rule, the traumatisms resulting from gunshot wounds are much greater than those dependent on cutting, and the mortality is higher. This is due to the fact that an incised wound heals more readily than a contused wound, and that the injuries are more localized when caused by a stab than when caused by bullets.

SYMPTOMS.

The symptoms of a penetrating wound are by no means always well defined, and there may be serious and even fatal lesions of the solid or hollow viscera, with very slight external manifestations. The most obvious symptom is the location of the wound of entrance; when this is on the anterior abdominal wall, it is fair to presume that the peritoneal cavity has been entered, and the track of the missile or stab should be explored in such cases. The exploration should not be the old haphazard method of probing with an unclean finger or probe, but the abdomen should be thoroughly cleansed and the track incised carefully, and if it is found to lead into the peritoneal cavity laparotomy should be done at once and injuries of the viscera and vessels sought for. This procedure should not be undertaken until the patient has been conveyed to the place at which he is to remain, which should be a well-equipped hospital when possible; neither should it be performed by an inexperienced and ill-equipped surgeon if it is possible to obtain the services of one who has the requisite qualifications. Sometimes the omentum will protrude from the wound, but it is very seldom that fecal contents or gas will escape externally. There may be a wound of exit as well as of entrance, but the bullets are retained usually in civil practice, and even when there are multiple wounds they may not indicate that the missiles have passed through the body, but that the patient has been shot in opposite directions. No special significance can be placed on the symptom of shock; in many cases it is entirely absent, but when present generally indicates hemorrhage. It is somewhat difficult to determine whether gunshot or stab wounds of the posterior abdominal or lower thoracic walls have entered the peritoneal cavity, and they also should be explored by incising the track of the ball or knife or in doubtful cases by making an exploratory laparotomy.

Wounds of the thorax as high as the fifth and sixth ribs frequently penetrate the peritoneal cavity and inflict serious injuries to the abdominal viscera. Such wounds must always be regarded as possible penetrating traumatisms of the belly. It is quite true in military practice that a person shot in the head, neck, thorax or extremities may have penetration of the peritoneum, but in civil life this is not generally the case. Vomiting of blood is a sign of injury to the stomach or upper intestine, and when associated with a wound suitably located makes the diagnosis reasonably sure. The bladder should be catheterized, and if it contains bloody urine a lesion of this viscus or of the kidneys or ureters is suggested. The escape of blood from the anus is not frequent, but when it does occur would indicate injury to the lower part of the intestinal tract.

The diagnosis of extent of injury done can only be determined by an operation or by postmortem examination.

PROGNOSIS.

The prognosis of penetrating wounds of the abdomen is exceedingly grave, and depends on the organs and structures injured, on the nature of the traumatism, on the degree of emptiness or fullness of the hollow viscera when injured, and on the presence or absence of serious hemorrhage. Wounds of the upper part of the abdomen are not so fatal as are those below the umbilicus, and small perforations of the stomach may not leak. Injuries of the liver, spleen and kidneys, if not extensive, are frequently recovered from. Gunshot wounds of the intestines in civil practice are usually fatal when unoperated on. In the civil war the mortality of gunshot wounds of both intestines was 80.3 per cent., while the same injuries to the small intestines

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

were followed by practically 100 per cent. of fatality. A bullet traversing the abdomen from before backward usually produces fewer lesions than one crossing the same cavity transversely or obliquely.

Stab wounds are probably followed by more hemorrhage than gunshot wounds, but the visceral lesions are not usually so extensive and can be repaired more readily and with less handling of the intestines, hence with less danger to the patient. Gunshot wounds of the pelvis are likely to pass into the pelvic cavity and to injure the organs and vessels situated therein either intraperitoneally or extraperitoneally, and with a high mortality.

TREATMENT.

The treatment of penetrating wounds of the abdomen is not yet definitely settled. Under an expectant treatment the mortality is enormous, and it was due to this fact that the elder Gross, in 1843, after a series of elaborate experiments on animals, advocated suturing the intestinal wounds; but his views were far in advance of his day, and his suggestions went unheeded. The frightful mortality of the civil war did not serve to impress the lesson any better, and it was not until 1881 that J. Marion Sims, as a last legacy to the medical profession, which he had already enriched in so many ways, insisted that these injuries should be treated by operation. The lesson was now learned, and soon successful operations were being performed for the relief of perforating wounds of the hollow viscera. It was supposed that the question of the proper treatment of penetrating wounds had been permanently settled in favor of laparotomy and suture of the lesions, but the faith of the profession has been somewhat shaken by the experience of the surgeons during the Spanish-American and Boer wars. According to the surgeon-general's report for 1899, there occurred 44 penetrating wounds of the abdomen in the U. S. Army, of which 30 died, a mortality of 68.2 per cent. In those cases where laparotomy was performed, the mortality was nearly 100 per cent.; hence a doubt is cast on the advisability of operating on such cases in military practice. In the South African war, the British surgeons also had to modify their views in regard to the propriety of operation, as many patients recovered without laparotomy and but few when it was performed. The essential difference between the mortality of these injuries at the present time in military practice from that of earlier wars is due to the small caliber projectile, steel or nickel jacketed, and the great velocity of the missiles propelled by modern firearms. The long, narrow bullet, projected with great speed, penetrates the tissues cleanly, does not become deflected, and is usually aseptic; hence, many serious wounds heal in a typical manner. In South Africa the wounded usually reached the operating hospital only after quite a long delay, and, as the climate is dry, water scarce, dust storms frequent and flies abundant, infection occurred very readily and operations were unsuccessful; hence, it was the part of wisdom to trust these cases to Nature rather than to perform laparotomy.

These conditions do not obtain in civil practice; the bullets are usually round or conical in shape, moving with a low velocity and extensively lacerating the intestines and other organs; the balls are not aseptic, and infection is of frequent occurrence, and death follows in a vast majority of cases when laparotomy is not done. I wish, therefore, to insist that penetrating stab and gunshot wounds of the abdomen occurring in civil life should be subjected to operation. In this class of cases, at least, the principle of operative interference has been fully established, and one is no longer obliged to apologize for the performance of laparotomy, but is under the necessity of defending himself if he fails to give his patient the benefit of an operation. The operation should be done at the earliest practicable moment before there is extensive fecal extravasation, which will certainly occur if the intestines are perforated, and peristalsis is set up. Do not wait for symptoms of intestinal injury, but operate at once. Every hour's delay adds very materially to the mortality; after the lapse of 24 hours nearly every case of intestinal perforation terminates fatally from suppurative peritonitis. As shock is usually due to bleeding, it is no contraindication for operation, and laparotomy should be done at once, and the bleeding vessels secured by clamp or ligature or controlled by pressure. Stimulation, however, by strychnia, digitalis or salt solution should also be employed. While the median incision is usually the best, as it affords greater access for the systematic exploration of the abdominal viscera, it may be preferable in some cases to make the laparotomy at the site of the external wound if only a small portion of the cavity has been traversed. The first duty of the operator will be to search for and to control bleeding vessels if active hemorrhage has taken place. After the arrest of bleeding, a careful search should be made for lesions of the hollow viscera, stomach, intestines, gall bladder and urinary bladder. I wish especially to emphasize the importance of a careful search of all parts of the intestinal tube, as the instances are not a few in which perforations have been overlooked.

WOUNDS OF THE STOMACH.

The stomach, being a large and fixed organ in the upper part of the abdominal cavity, is especially likely to be penetrated by wounds of the lower thoracic and upper abdominal regions. The penetration may involve the anterior wall alone or both surfaces may be perforated. It is necessary, therefore, to explore both surfaces of this viscus unless it is certain that only one penetration has occurred. At times the bullet is lodged in the stomach, in which case there will only be one hole in the viscus. The exploration of the posterior surface of the stomach is accomplished by tearing through the great omentum, when by sight and touch perforations may be discovered. Ordinarily it will not be difficult to suture the lesions on the anterior wall of the stomach, but when these are situated high up toward the cardiac orifice or at the extreme fundus it may be necessary to make an aditional incision in order to do so, or to divide one or more ribs. It may be impossible to reach some perforations on the posterior wall. Often the stomach is full when wounded, and there is a free escape of its contents into the greater or lesser peritoneal cavities, rendering a careful cleansing of these parts essential. The contamination of the lesser peritoneal cavity is especially serious, as it is difficult to cleanse it properly, and efficient gauze drainage ought to be employed. It may be best to drain through the back, as well as anteriorly.

Gunshot wounds of the stomach are frequently complicated with injuries of the lungs, diaphragm, liver, gall bladder, spleen, kidneys, pancreas, intestines and large vessels; hence, a high mortality follows, with or without operation. In the civil war four incised and punctured wounds of the stomach were observed, all of which terminated fatally. "One incontestable recovery from a shot perforation, a few recoveries from shot

wounds in the gastric region, in which the diagnoses were not determined unequivocally, and nearly 60 fatal cases of more or less complicated shot wounds of the stomach" were observed. In no case was suture employed. At my clinic, three patients with perforating stab and one with gunshot wound of the stomach have been operated on successfully, while two patients with gunshot wounds of the stomach, complicated with injuries to the spleen in one instance and perforation of the chest, lung, diaphragm and liver in another, died from shock and hemorrhage.

WOUNDS OF THE INTESTINES.

Owing to the large area occupied by the intestines, injuries to this part of the alimentary tract occur very frequently. It is difficult to understand how a bullet passing through the abdomen from before backward below the umbilicus can fail to perforate the intestines, yet this is sometimes the case. More often the bowels are perforated in a number of places. As has been said, the oblique and transverse passage of a missile through the abdominal cavity is attended with the greatest damage to the viscera. A careful search should be made for intestinal perforations; if the course of the bullet is known, only those parts in the immediate vicinity of the wound may require to be examined; if the course is unknown or is doubtful, the whole intestinal tube may have to be carefully searched. When the perforations are found, they should be closed with silk or catgut sutures; if the wound is small, it may be inverted by a purse-string suture; if large, it must be closed by some of the various forms of intestinal sutures. When there is much loss of substance, the rent should be sutured transversely to the lumen of the gut in order not to narrow unduly the lumen of the tube. When there are several openings in close proximity to each other, a resection of the intestine may be required. Care should be taken to prevent undue exposure of the viscera. The peritoneal cavity is usually more or less contaminated with fecal discharges, but this does not always occur if the operation is not too long delayed. In every case a careful toilet of the peritoneum should be made, the exposed parts washed off with salt solution, and, in my opinion, gauze drainage employed. Injuries of the large intestine are attended with a lower death rate than those of the small. A number of cases of undoubted gunshot wounds of the large intestines recovered during the civil war, while few, if any, such lesions of the small gut were survived. Of twelve patients with gunshot perforations of the small intestines, many of them complicated with other injuries, operated on in my service, 50 per cent. recovered. One patient with stab of the ascending colon recovered, and one with gunshot wound of the rectum and bladder died. I have had no case of perforation of the gall bladder, but I imagine the proper treatment would be cholecystectomy. Of 20 cases occurring in my service, in which the hollow viscera were perforated, 55 per cent. of the patients recovered after laparotomy and suture.

WOUNDS OF THE SOLID ORGANS.

Injuries to the liver and spleen occur occasionally without lesions of other organs, but usually in conjunction with traumatisms of neighboring structures. The danger in these cases is chiefly from hemorrhage, which is frequently very great. Bleeding may be controlled by suture in some cases or by packing the wound with gauze; or, in the event of the spleen being disorganized, it may be removed. The pancreas is seldom injured, but when it is lacerated the danger is great.

The kidneys may be injured by gunshot or stab, either without peritoneal penetration or with it. Lesions of these organs require exploration, packing, suture or nephrectomy, in accordance with the nature and extent of the injury found.

WOUNDS OF THE PELVIS.

Wounds of the pelvis, like those of the chest, are liable to involve the peritoneal cavity and to produce lesions of the pelvic viscera, notably of the bladder. The examples of gunshot wounds of the bladder, with retention of the bullet, are quite frequent, and require removal of the foreign body and the repair of the visceral damage. Extraperitoneal lesions of the bladder appear to be as fatal as those opening the peritoneal cavity.

HEMORRHAGE.

Hemorrhage is one of the most serious complications of intra-abdominal injuries and one of the most frequent. In gunshot wounds it does not occur so frequently as in cutting lesions, unless some of the great vessels are lacerated. In a case of stab of the ascending colon herewith reported, the bleeding could not be arrested until the aorta was compressed. The report of a remarkable double perforation of the aorta, in which the patient survived five days and two hours, I also append to this paper.

SUMMARY OF CASES.

The following summary includes all patients treated by me and my assistants, but does not include patients treated by my surgical colleagues at the University Hospital:

Total number of undoubted penetrating wounds of the abdomen treated, 29. Cases in which laparotomy was not done, 5; of which, one patient recovered, 20 per cent., and four patients died, 80 per cent.

Penetrating wounds of the abdomen, in which laparotomy was done, 24; of these, 15 patients recovered, 62.5 per cent., and 9 died, 37.5 per cent.

Penetrating wounds of the abdomen, with perforations of the hollow viscera, 20; 11 patients recovered, 55 per cent., 9 died, 45 per cent.

Gunshot wounds with perforation of the hollow viscera, 16; 7 patients recovered, 43.75 per cent., 9 died, 56.25 per cent.

Stab wounds with perforations of the hollow viscera, 4; 4 patients recovered, 100 per cent.

Penetrating wounds in which various lesions were found, but without actual perforations of the hollow viscera, in which laparotomy was done, 4 patients, all of whom recovered.

While the cases here enumerated are too few to prove much, they are nevertheless suggestive—without operation 80 per cent. of the patients died; with operation, 62.5 per cent. recovered.

CASES OF PENETRATING WOUNDS OF THE ABDOMEN IN WHICH LAPAROTOMY WAS DONE.

GUNSHOT WOUNDS.

CASE 1.—Pistol wound of the small intestines, suture of four perforations, subsequently traumatic aneurism of circumflex iliac artery. Recovery.

Patient.—P. D., white, aged 60, was admitted to the University Hospital, Dec. 22, 1893.

Examination.—He was not seen by me until eighteen hours after he was shot. The ball entered the abdomen four inches above Poupart's ligament, and about the same distance to the inner side of the anterior superior spine of the ilium, and passing through the ilium, was found under the integument of the right buttock. He was not shocked, temperature 101, pulse 104.

Operation.—An incision was made through the track of the bullet. Considerable liquid blood and blood clots were found in the peritoneal cavity, and some feces and foreign bodies. These were removed, and the exposed parts flushed with hot

water. There were four perforations of the ileum, near the ileocecal valve, three being small, while the fourth was an inch in length, horizontal in direction and with widely everted edges. All the openings were sutured, the largest opening being closed transversely, to avoid any undue narrowing of the gut. Gauze was packed into the incision.

Result.—The patient did well for nearly three weeks, when a pulsating lump, which proved to be a traumatic aneurism, of the deep circumflex iliac artery, was discovered in the right iliac fossa. An incision above Poupart's ligament exposed the vessel in its continuity; it was ligated, and the man made an uneventful recovery.

Case 2.—Pistol wound of abdomen, four perforations of ileum. Death.

Patient.—A white man, aged 30, living in Virginia, was shot about 6 p. m. on Nov. 20, 1894. He was placed on a steamboat and brought to Baltimore, reaching the hospital about 8:30 the next morning, or fourteen hours after receiving the injury.

Examination.—At this time he was suffering from general peritonitis, the abdomen being distended, and rigid, with pain, tenderness and regurgitant vomiting present, pulse 160, and temperature 103. The bullet had entered the right side of the abdomen between the umbilicus and the anterior superior spine of the ilium.

Operation.—In the absence of Dr. Winslow, Dr. Spruill performed laparotomy at the site of the bullet wound, finding blood, feces and lymph extravasated in the peritoneal cavity, with agglutination of the intestines. Four holes were found in the ileum, which were closed, the belly flushed out and the incisions sutured. He died sixteen hours later.

Autopsy.—At the autopsy, the bullet was found embedded in the psoas muscle, and all the perforations closed and water tight. The intestinal canal was full, which doubtless was the cause of the rapid peritonitis.

Case 3.—Gunshot wound of the stomach. Recovery.

Patient.—S. W. R., white, aged 58, was admitted to the University Hospital on July 4, 1895. He was shot with buckshot fired from a small cannon by some boys who were on an elevation. A shot struck him in the left side, just below the apex of the heart, and passed into the peritoneal cavity. He vomited blood with clots.

Operation.—He was operated on probably within two hours. The perforation was found on the anterior surface of the stomach, from which gas escaped, but no extravasation of food had occurred. The opening was closed, and after the excision of the discolored edges of the bullet wound, the incision was sutured. He made a good recovery in one month.

Case 4.—Pistol wound of the abdomen; six perforations of the small intestine. Death.

Patient.—E. J., colored, aged 25, was admitted to the University Hospital on September 8, 1895. He was shot about 10 p. m., and reached the hospital an hour later.

Examination.—There was a bullet wound of the abdomen, four inches above Poupart's ligament, and two inches to the left of the median line. The skin was blackened with powder, showing that the pistol had been held almost in contact with the body.

Operation.—At midnight laparotomy was done. The incision was made in the middle line, extending from the umbilicus to the pubes. Five perforations of the ileum were found and three of the mesentery, and there had been but little hemorrhage and no escape of intestinal contents. The perforations were closed and the cavity flushed out. The abdominal walls were very rigid. The patient took the anesthetic badly, and went into a condition of collapse, hence the operation was hurried.

Result.—The patient died of peritonitis four days later, and an undiscovered perforation was found in the angle of junction of the ileum with the cecum. The other perforations had healed firmly. The bullet was found in the cecum. This man's death was due to the overlooking of a perforation, and is greatly to be regretted.

Case 5.—Gunshot wound of the abdomen; seven perforations of the small intestines and one of the sigmoid flexure. Death.

Patient.—B. F. T., white, aged 66, was shot on Sept. 2, 1896, and was admitted to the hospital within an hour. The ball entered the right side of the abdomen.

Operation and Result.—A median laparotomy was done, about two hours after he was shot. Seven holes in the small intestine were sutured, and a search not revealing any further wounds, the abdomen was closed. He was not shocked by the operation, and seemed to be in a favorable condition for recovery. Vomiting of blood soon set in, the cause of which I am at a loss to understand. He died on September 3, and the coroner said that the sigmoid flexure was torn and that the No. 38 bullet lodged in the left side of the sacrum. I do not know whether or not the man died of peritonitis.

Case 6.—Pistol wound of the liver, small intestine and mesocolon. Recovery.

Patient.—S. T., colored, aged 12, was shot with a pistol on Sept. 4, 1897, at 5 p. m., and was admitted to the University Hospital five hours later. The bullet had entered the abdomen, slightly to the right of the middle line, and about midway between the ensiform cartilage and the umbilicus.

Operation.—Laparotomy was done at 11:30 p. m., the incision, four inches in length, passing through the bullet wound. The bullet had passed through the lower border of the liver, traversed the transverse mesocolon, and wounded the jejunum in five places. The intestinal wounds were ragged, with everted edges, and liquid feces escaped from the openings. The perforations were closed, the intestines cleansed, gauze packed over the openings in the liver, and strips of gauze allowed to protrude from the wound for drainage. The patient was brought from the country, a distance of 10 miles. He made a prompt recovery.

Case 7.—Pistol wound of small intestines. Recovery.

Patient.—E. A. B., white, aged 44, was shot on Sept. 6, 1897, at 3 p. m., and was admitted to the hospital one hour later.

Examination.—A bullet wound was found one inch to the right of the middle line, and one inch below the navel.

Operation.—The incision passed through the bullet wound, and revealed six ragged holes in the small intestines and one through the great omentum. The perforations were sutured with mattress sutures, closing the openings in a transverse direction to the lumen of the gut. This man was very adverse to an operation, and required considerable persuasion before he would consent. Gauze drainage was employed. Recovery took place, but for some days after operation he was very ill.

Case 8.—Pistol wound of duodenum. Recovery.

Patient.—T. F., colored, aged 23, was shot with a pistol on Sept. 14, 1897, at 11 p. m., and was admitted to University Hospital at 9 a. m. the next morning. He also had been brought from the country, in fact, from the same place as the patient in Case 6, 10 miles distant. The bullet had entered the abdomen on the right side, at about the tip of the eleventh costal cartilage.

Operation.—Operation was done eleven hours after the injury. The incision was made in the right linea semilunaris, eventually extending from the costal arch to the pelvis. The peritoneal cavity was filled with dark blood, bile and intestinal fluids, which had gravitated even into the pelvis. A large ragged wound, about an inch in length, was found in the upper part of the duodenum, from which fluids exuded freely. Owing to the deep situation of the injury, it was very difficult to suture the perforation, but it was finally accomplished, two rows of Lembert sutures being placed. The peritoneal cavity was flushed with hot sterile water, and carefully mopped out, and a glass drainage tube was placed between the stomach and liver and another in the pelvis, and gauze was also packed into these parts. The middle of the incision was sutured, and the upper part left entirely open with the gauze protruding. Contrary to expectations, the patient did well, his highest temperature being 100, pulse 90. The bullet, a large conoidal one, was voided at stool on the sixteenth day.[1]

Case 9.—Pistol wound of small intestine. Death.

Patient.—W. D., white, aged 27, was shot on Oct. 1, 1897, and was brought at once to the hospital. The patient, a stout, short and flabby man, had been shot in the left side

1. I exhibited these last three patients at the same meeting of the Clinical Society of Maryland, all of them being on stretchers.

of the belly, the bullet entering about two inches below and to the left of the umbilicus.

Operation.—Median laparotomy was performed two hours after injury, and five perforations of the small intestine and three of the mesentery were found and sutured. The patient took the anesthetic badly. Subsequently he complained of much pain and vomited frequently. Death occurred on the third day.

Autopsy.—Stitches were intact; there was some plastic peritonitis, but no purulent infection and no perforations had been overlooked. He seemed to have died of acute sepsis.

All the preceding cases, with the exception of Case 2, have been published in detail in the *Annals of Surgery*, vol. xxviii, p. 487, and are presented in abstract here.

CASE 10.—Pistol wound of abdomen and thigh. Recovery.

Patient.—W. V. W., white, aged 43, was admitted to University Hospital on Dec. 18, 1898.

History.—While seated in a buggy, he attempted to place a heavy Colt's Navy revolver in an inside pocket of his overcoat, when the hammer of the pistol caught in the torn lining of the pocket and the weapon was discharged. The 38-caliber bullet went downward and penetrated the abdomen about an inch above Poupart's ligament, and passing through the flexed thigh, was found embedded in the cushion of the carriage seat. This occurred at 8:30 a. m., and I saw him almost immediately and sent him to the hospital.

Operation.—He was pale from apprehension, but was not greatly shocked. He was operated on one and a half hours after injury. The wound of entrance was quite large, that of exit very small. An incision was made parallel with Poupart's ligament, and the track of the bullet explored. It descended behind the ramus of the pubis, escaping the external iliac vessels, and emerged from the pelvis at the obturator foramen, and then passing through the thigh emerged about the gluteal fold. I did not think the peritoneal cavity had been penetrated, but concluded to do a median laparotomy and to search for lesions. On opening the abdomen, there was no evidence of injury to be noted until I passed a piece of gauze, held in a long forceps, into the left side of the pelvis, which showed fecal stains, when it was withdrawn. A loop of the ileum was now pulled up and a rent about one inch in length was found, located near the mesenteric border of the gut. This was sutured with a double row of Lembert sutures and securely closed. The pelvic cavity was wiped out, all blood clots being removed, a large glass drainage tube inserted and the incision closed down to the tube. A strip of gauze was also placed in the track of the bullet for drainage. The after-history is quite uneventful, his temperature was afebrile, the drainage tube was removed on the fourth day and he left the hospital in three weeks cured.

CASE 11.—Pistol wound of the thorax, penetrating abdomen, and passing through the stomach and liver. Death.

Patient.—K. O'N., white, female, aged 30, was admitted Christmas night, 1899.

History.—Shortly before coming to the hospital she was shot by a man, the pistol being held close to her body. The bullet entered the left side of her thorax, in the anterior axillary line, and ranging downward, fractured the seventh rib, opening the pleural cavity, and passing through the lung and diaphragm, entered the peritoneal cavity, passed through the liver and both walls of the stomach, and lodged in the left psoas muscle.

Operation.—Laparotomy was done at once, and a wound on the anterior surface of the stomach, near the point of entrance of the esophagus, was sutured with difficulty. It was believed that another wound was present on the posterior wall of the stomach, but it could not be exposed. There was considerable bleeding from the liver and other injured structures, and she was markedly shocked. Gauze was packed above and below the stomach. In spite of free stimulation, she did not react from the depression and died twelve hours later.

CASE 12.—Pistol wound of the stomach and spleen. Death.

Patient.—F. S., colored, aged 23, was admitted on the night of Sept. 27, 1898.

History.—While attempting to escape from a policeman, he was shot in the left side over the spleen, between the eighth and ninth ribs, the ball passing through the spleen and into the stomach at its great extremity, causing a wound an inch in length in the wall of the stomach.

Operation.—Laparotomy was done at once, and the lesions mentioned discovered. The stomach was filled with undigested food, which had escaped into the greater and lesser peritoneal cavities. The wound in the stomach was sutured, with great difficulty, the peritoneal cavity cleansed as well as possible, and the incision left partly open, with gauze protruding from it for drainage.

Result.—When the patient was returned to the ward, my assistant elevated the end of the bed, as there was a condition of shock. The next day a loop of small intestine protruded from the wound and was replaced; whether this had any influence in causing his death I do not know, but he died in collapse within twenty-four hours.

Autopsy.—At the autopsy the perforation was found closed and the bullet lodged in the stomach.

CASE 13.—Pistol wound of stomach and intestines. Death.

Patient.—A. T., colored, aged 44, was admitted to the hospital on Nov. 6, 1900. The ball had entered the epigastrium and passed through the walls of the stomach and then passing downward, penetrated the small intestines in many places and lodged under the skin of the buttock.

Operation.—Laparotomy was done, and the holes in the stomach and small intestines sutured. There was much extravasation of stomach and intestinal contents, which could not be thoroughly removed. Gauze packing was employed. Peritonitis promptly supervened and the man died in two days. The operation to repair the injuries in this case was very extensive.

CASE 14.—Pistol wound of the abdomen, involving the small intestines, bladder and rectum. Death.

Patient.—R. M., colored, aged 25, was shot in the lower part of the abdomen, and the bullet ranging downward, passed through a loop of the ileum, making two openings, and then perforated the bladder and the rectum.

Operation.—These perforations were sutured, that in the rectum being difficult to reach. Pneumonia supervened, probably from the anesthetic, and he died in a few days. This case also occurred in November, 1900.

CASE 15.—Rifle shot of the stomach, jejunum and sigmoid flexure. Death.

Patient.—L. H., white, aged 15, was admitted to the hospital Christmas day, 1901. He was shot with a rifle at Savage, Md., four hours previous to admission, and was brought about 30 miles to the hospital.

Operation.—Laparotomy was done at once, and two perforations were found in the stomach, two in the jejunum and one in the sigmoid flexure; these were sutured, the peritoneal cavity cleansed of blood and fluids. The patient did badly, vomiting set in, and symptoms of peritonitis supervened, of which he died in forty-eight hours.

CASE 16.—F. B., Italian, aged 26, was admitted to hospital on Christmas day, 1901, a short time after the previous patient. He was shot with a pistol at Skyesville, Md., about 35 miles distant, at 10:30 a. m., and reached the hospital at 6 p. m. The bullet, No. 38, entered on the right side of the left lumbar region. His belly was rigid and he complained of much pain. The bladder was emptied and the urine was normal in appearance.

Operation.—An eight-inch incision was made by my assistant, Dr. A. A. Mathews, through the left rectus muscle. On opening the peritoneal cavity, a loop of small intestine at once presented in the incision, having two perforations, which were sutured, and a systematic search was made of all the intestines and viscera, and another perforation was discovered in the jejunum, which was closed, and the whole cavity flushed with hot normal salt solution. Drainage was established with gauze packing. The patient made a prompt and uneventful recovery.

CASE 17.—Pistol wound of the abdomen. Recovery.

Patient.—W. K., white, aged 16, was shot with a pistol by a negro boy, at a distance of 12 to 15 feet, on Nov. 20, 1904. The bullet entered one and one-half inches above the anterior superior spine and three inches to the right of the umbilicus.

Operation.—An incision was made at the wound of entrance and the peritoneal cavity opened. The missile grazed the cecum, making a contusion, but no perforation, and then passed through the posterior layer of peritoneum and lodged in the muscles. The contused area was turned in with sutures, the cavity cleansed and drainage established. Some suppuration occurred, but the boy made a good recovery.

STAB WOUNDS.

Case 18.—Stab wound of both walls of the stomach. Laparotomy. Recovery.

Patient.—Mrs. M., white, aged 53, was admitted to the hospital on Nov. 23, 1896, with a stab wound of the abdomen.

Examination.—The wound was one-half inch in length, situated near the middle line and 3 inches below the ensiform cartilage. The patient was much shocked, the pulse rapid and weak and the extremities cold.

Operation.—A transverse incision, including the stab wound, was made across the abdomen, and at once the odor of beer was perceived and particles of partly digested vegetable matter were found loose in the peritoneal cavity, with blood clots. The bleeding wound was found on the anterior wall of the stomach, the vessels were tied and the openings closed with Lembert's sutures. The great omentum was torn through, the posterior wall of the stomach exposed and a wound similar to that on the anterior surface was found and closed. The abdominal cavity was mopped out and then flushed with hot sterile water and the incision was closed without drainage. Highest temperature was 99.4 and pulse 96. She was discharged well in six weeks. The operator in this case was my associate, Dr. St. Clair Spruill.

Case 19.—Stab wound of ascending colon. Recovery.

Patient.—G. L., white, aged 27, huckster, was admitted to the hospital Dec. 14, 1899, with a stab wound midway between the ribs and the crest of the ileum on the right side.

Operation.—At my request, Dr. H. M. Fitzhugh performed laparotomy and found the ascending colon penetrated in three places and partially cut in another place. There was a furious hemorrhage, the source of which was not determined, nor could it be controlled until the aorta was grasped and prolonged compression made. The wounds in the intestines were sutured, blood clots removed and the abdominal incision closed.

Result.—He was much shocked and required normal salt infusion. The after-course was not smooth, infection of the abdominal wall occurred and much sloughing, but he gradually recovered, withstanding also a sharp attack of pneumonia.

Case 20.—Stab wound of left side, severing the cartilages of the lower ribs and penetrating the stomach. Recovery.

Patient.—J. W. P., white, aged 32, brakeman, was admitted to the hospital on Nov. 2, 1897, at 10:30 p. m. One hour previously he was stabbed in the left hypochondrium, the cartilages of the costal arch being severed and the omentum protruding.

Operation.—Immediate laparotomy was done, the protruding omentum reduced and an incision into the stomach closed with silk sutures. The contents of the stomach had not escaped, and the abdominal incision was closed. The after-history is uneventful, and he made a prompt recovery.

Case 21.—Stab wound of abdomen, severing costal cartilages. Recovery.

Patient.—J. W. R., colored, was admitted to the hospital Oct. 26, 1897. While engaged in an exciting discussion in the country, he was stabbed in the belly and came to the hospital twelve hours later.

Examination.—The injuries were almost a counterpart of the preceding case, except that the knife did not penetrate so deeply and the stomach was not cut. He had a cut 3 inches long in the left hypochondrium, severing the costal cartilages, and penetrating the peritoneal cavity. The omentum was protruding from the wound and was liberally covered with iodoform, and the parts were filthy.

Operation.—The belly was thoroughly cleaned and the protruding omentum excised. An incision was made and the stomach and other structures examined without finding any further lesions. The man made an uninterrupted recovery, and I had the pleasure of exhibiting him and the preceding case together at a meeting of the Clinical Society.

Case 22.—Stab wound of the stomach. Recovery.

Patient.—A man was admitted to the hospital Oct. 6, 1901, at 3 a. m.

Examination.—He was very much shocked and had two punctured wounds of the chest wall, which did not penetrate the pleural cavity, and one just below the costal border on the left side, about 2½ inches from the middle line. This wound penetrated the anterior wall of the stomach, which was distended, but the posterior wall escaped injury.

Operation.—He was stimulated with strychnia, and 700 c.c. normal salt solution were injected. A long incision was made on the left side through the left rectus muscle, and a large quantity of blood rushed out. There was also considerable extravasation of the stomach contents into the peritoneal cavity. A cut one inch in length was found in the stomach, from which the mucous membrane protruded as a rosette. Two arteries were spurting and were ligated, and the perforation was closed with three rows of sutures. Large quantities of clotted blood were removed from the dependent portions of the peritoneal cavity. The omentum and intestines were washed off, the cavity flushed with hot salt solution and gauze tucked in every direction for drainage. Although the patient was in a very critical condition, recovery ensued. This patient was operated on by my assistant, Dr. A. A. Mathews.

Case 23.—Stab wound of the abdomen, made with scissors. Recovery.

Patient.—A man about 54 years of age, a voluntary patient at the Sheppard and Enoch Pratt Hospital, on account of melancholia, was taking exercise with an attendant, and saw a large shears in a stable. Before he could be stopped, he pulled up his vest and stabbed himself five times in the abdomen. This occurred about 3 p. m. on Nov. 1, 1902. He had no sooner inflicted, as he supposed, fatal injuries, than he became possessed with an urgent desire to live.

Examination.—I reached him about 6 p. m., and found him pale and somewhat shocked and very repentant. There were five punctures in the upper and middle parts of his abdomen, from which blood was escaping.

Operation.—Laparotomy was done at once, under difficulties, and it was found that two of the punctures had penetrated the peritoneal cavity, and that one puncture had also cut the stomach, perhaps not entirely through. This incision was sutured, blood removed from the abdomen, the wounds disinfected as well as possible and gauze drainage employed. He made a good recovery, and his melancholia disappeared as soon as his convalescence became assured, and he continues well to the present time.

Case 24.—Stab wound of abdomen. Recovery.

Patient.—Italian, aged 21, was stabbed in the right side of the belly at Havre de Grace, Md., on May 28, 1905. He rode some distance to a physician's office, carrying his intestines in his hand. The physician enlarged the wound and returned the intestines and sewed up the skin with silk sutures. More than twenty-four hours later he was brought to the University Hospital, a distance of 36 miles.

Operation.—The abdomen was thoroughly cleansed, the wound opened and enlarged, and a careful examination of the intestines made. A marked peritonitis was already present. The intestines were agglutinated with each other and there was some foreign matter in the peritoneal cavity. There was a partial cut in the small intestines and in the mesentery. The intestines were washed off, drainage with gauze instituted and recovery progressed rapidly.

CASES OF PENETRATING GUNSHOT WOUNDS OF THE ABDOMEN IN WHICH LAPAROTOMY WAS NOT DONE.

Case 25.—Pistol wound of abdomen. Recovery.

Patient.—J. C., colored, aged 29, received a wound from a pistol of small caliber, fired from some distance. The ball entered the abdomen one and one-half inches below the umbilicus, making a small circular hole, through which the omentum protruded.

Treatment.—A drainage tube was inserted, ice bags applied externally and opium administered internally. He was discharged well in one month.

Remarks.—This occurred in 1881, immediately before Sim's lectures on this subject, and was the first case of penetrating wound of the abdomen that came under my care. Probably no visceral lesion was sustained.

CASE 26.—Pistol wound in epigastrium and of right forearm, causing compound fracture of the radius. Death five days and two hours after injury.

Patient.—S. P., negress, was shot by her husband with a 32-caliber revolver.

Injury.—One bullet fractured the right radius, the other penetrated the epigastrium, one and one-half inches to the left of the linea alba and three inches below the ensiform cartilage. From the location of the wound it was thought that either the stomach or transverse colon was perforated. The patient had no vomiting of blood or bloody stool, had pain with tympanites at the point of injury, but no elevation of temperature. No operation was performed. She lived five days and two hours.

Autopsy.—No peritonitis was found. There was no perforation of any of the viscera. Some liquid blood was in the abdominal cavity, and the peritoneum was extensively raised by an enormous blood clot under it. The bullet had passed entirely through the aorta, below the celiac axis, making a slit in its anterior surface and an everted counter opening, and had then entered the body of the third lumbar vertebra. It seems almost incredible that a person could live more than five days, with two bullet holes in the aorta.

CASE 27.—Pistol wound of small intestine, with 25 perforations and 2 in bladder. Death in eighteen hours.

Patient.—C. W., white, on June 3, 1884, was shot in the hypogastric region, with a large pistol; he then turned and received another wound in the buttocks.

Injury.—The bullets pursued a nearly parallel course, and one lodged under the skin of the abdomen an inch from the first wound, while the other was found under the integument behind, three inches distant from the posterior wound. He was admitted at night, pulse good and shock not marked, urine bloody. When seen by me the next day he was in collapse, pulseless, vomiting, and in great pain.

Autopsy.—The peritoneal cavity was filled with blood, feces, pepper pods, and cherry stones. The lower portion of the small intestines for about six feet was riddled, there being twenty-five holes in the gut, one in the mesentery and two in the bladder.

CASE 28.—Pistol wound of the liver. Death in eighteen or twenty hours.

Patient.—D. G., colored, was shot on the same day as the last two mentioned patients, and like these with large-sized pistols.

Injury.—The wound was on the right side, in the anterior axillary line, and about two inches from the nipple. The ball entered the fifth intercostal space, and ranging downward, fractured the sixth rib and entered the abdomen between the sixth and seventh ribs. Much bleeding and marked shock followed, with pain in region of wound and in the right shoulder. No bile escaped from the wound. The contents of the stomach were vomited, but no blood. The patient did not rally from the profound shock, and died on the same day.

Autopsy.—The bullet passed entirely through the upper surface of the liver, and was found embedded in the substance of the diaphragm. Peritonitis was beginning.

CASE 29.—Pistol wound of back; perforation of the small intestine in two places. Death in twenty-nine hours.

Patient.—W. G., colored, aged 34, was shot by a policeman from whom he was trying to escape. The man was running, and was about 15 feet distant from the officer. The weapon used was a large-sized Smith & Wesson revolver. The ball entered one inch to the left of the second lumbar vertebra. Seven hours after the injury the pulse was 82, respiration 32, and temperature 98.8, and there was no shock. Soon pain about the umbilicus set in, with muscular rigidity, vomiting, and also an alvine evacuation of blood. Urine was passed voluntarily and was not bloody. There was numbness of the left thigh in the area supplied by the anterior crural nerve. I was anxious to perform laparotomy on this man, but was overruled by superior authority. Peritonitis supervened rapidly, and the patient died in twenty-nine hours from the time of injury.

Autopsy.—The ball had entered the peritoneal cavity from behind, pierced the small intestine in two places and finally dropped into the pelvis. Feces had escaped and an intense general peritonitis was set up.

There are here 5 cases of penetrating abdominal wounds, with one recovery and four deaths.

No operation was done on any of these patients, and the mortality was 80 per cent., which corresponds pretty accurately with that computed by Otis. Would the mortality have been less under operative treatment? The first patient would probably have recovered if the belly had been opened, as recovery occurred spontaneously, and the fifth patient would have had excellent chances for recovery. It is possible, but not probable, that the case of perforation of the liver might have been saved if gauze packing had been made use of to arrest bleeding. It is not probable that the patient with 28 perforations of the small intestine and bladder could have been saved by any treatment. Nor is it any more reasonable to expect a cure after a double perforation of the aorta. In my opinion, however, all of these patients should have been subjected to laparotomy.

DISCUSSION.

DR. CHARLES M. COOPER, San Francisco, referred to two incidents that came under his observation during the late South African war. The first relates to a patient who had been shot in the abdomen, in whom no exit wound could be found. Unsuccessful efforts to locate the bullet had been made and the *x*-ray used. Prof. John Chiene, when shown the patient, remembered the golden rule—"examined the rectum"—and found the bullet, thus emphasizing the importance of not forgetting old methods of diagnosis. The second relates to a physician who had been shot in the abdomen, and who recovered without operation. In reply to an inquiry as to his opinion of the main factor responsible, he said he had vomited the day before he was shot and had eaten nothing afterward. Subsequent to his injury he continued to refuse food, and thus applied to himself the well-known starvation treatment of acute abdominal diseases that is associated with the name of Dr. Ochsner. This principle, Dr. Cooper believes, should be enforced in the treatment of patients who are not operated on, care being taken to keep the mouth and fauces as clean as possible and to prevent the swallowing of saliva.

DR. FLOYD MCRAE, Atlanta, Ga., said that physicians in the South see more pistol wounds than do physicians in the North. He said that in exceptional cases suturing the bowel in a transverse direction to prevent contractures is the best thing to be done. In this way there is produced an infolding which is particularly obstructive and a tendency to separation of the edges of the wound. Suture in the longitudinal direction should be the rule. Dr. McRae has seen some cases in which the bowel was separated from the mesentery where it was not considered of much importance, but later there was perforation and death. The mesentery is the only means of blood supply to the intestine, and if it is separated a fatal result will certainly occur later. This condition calls for a resection of the bowel. In the toilet of the bowel physicians used to use gallons of water and had a larger mortality than now. It is only in exceptional cases that general lavage of the peritoneal cavity is advisable. The non-exposure of the viscera is a very important point in technic, and the man who follows the intestines carefully without exposure will have a lower mortality.

DR. DEFOREST WILLARD, Philadelphia, said that one point of importance is the question of excessive handling. If the physician is unable with a dry toilet to do good work, posterior drainage will be an exceedingly valuable addition and will save some lives.

DR. JOHN B. BOUCHER, Hartford, Conn., said that his experience with recent gunshot wounds of the abdomen leads him to believe that drainage is a decided disadvantage. He be-

lieves in sewing each perforation as he finds it, making as thorough an examination with as little exposure of the viscera as possible, and after careful sponging, closing the peritoneal cavity tight. By this means better results will be obtained than by drainage, which unquestionably lowers the resistance of the peritoneum. No chance should be left for external contamination.

Dr. R. Winslow said that handling the intestines is not good practice, if it can be avoided. As to washing out the peritoneal cavity, if there has been but little contamination, certainly not, but if there has been a great deal of soiling, as for example, with beer, food, feces, etc., plenty of water should be used. He is convinced that these cases should be drained.

THE DENTISTRY OF TO-MORROW.*

HARRY P. CARLTON, D.D.S.
SAN FRANCISCO.

Several years ago I had the opportunity to read before the Odontographic Society of Chicago a paper on "University Training and Dental Education," in which I took the ground that dentistry would only be a full profession and recognized as such when the character of the men who comprised it brought its recognition up to what it should be; that as this increase in dignity and professional status must come from within the body of the profession itself, a high grade of young men must be added to its ranks. I outlined the demands of the day and the way to meet those demands, making a plea for better educated material with which to begin our dental training, claiming that with these superior men we could shut the doors of our profession against the trifler and the tinker, and reserve the training of our schools for those who brought to the work the instincts, traditions and outlook of the scholar; the result, real doctors of dental surgery.

I look on this occasion and this paper as but another chance to express my thoughts, to take another step forward, and to prophesy what seems to me the inevitable outcome. If dentistry is to continue to advance, along what lines must it go? It is pretty well conceded that mechanically we are close to the top notch, and only moderate advance can be looked for in that direction. The advance must then be along scientific lines, higher education and the encouragement of research and investigation.

Dentistry is a specialty of medicine, but the only specialty not universally requiring the degree of doctor of medicine. Indeed, dentistry should be one of the most important branches or specialties of medicine, for in the mouth begin all those processes of nutrition and metabolism which of recent years have attracted so much attention. Thus far neither the physician nor the dentist has given enough scientific study to this special area of the human anatomy, and neither knows what the other has been doing or learning or is doing and learning.

Medicine and dentistry, though cognate sciences, have always been separately studied. This disassociation is now seen to be a great error, due not alone to the fact that the relation of the mouth and teeth to the rest of the anatomy was not understood, but also because only the mechanical aspect probably appealed to those who first considered the matter; no doubt dentistry had its beginning in the pulling of a tooth. This conception of dentistry as an entity and not as an integral part of medicine has made it an art, possibly a trade, rather than a science. A correct appreciation of physiology, pathology and bacteriology—physiology representing the normal relation between the mouth and the rest of the alimentary canal; pathology showing the relation between the deranged functions of the mouth and abnormal conditions of other portions of the alimentary system; and bacteriology as an outgrowth of the study of pathology, showing the causes of the pathologic conditions of the mouth—necessitates an entirely different attitude and is rapidly bringing the child, dentistry, back to its real parent, medicine. It has been said that "Dental science has brought the diseases of the mouth, jaws and teeth so obviously under the domain of general pathology, that somatic problems elsewhere presented in the body are best and easiest studied in the mouth."

The opportunities of modern dentistry are so new and vast that not only is more manipulative skill demanded, but ampler education, more insight, more sagacity, faculties to whose development nature and elaborate training must both contribute. And this training must be given under the guidance of scientific teachers, non-practitioners, men of productive scholarship, men who devote their lives to the special work of teaching the various subjects which are embodied in a medical education, instead of by those who give instruction during the intervals of a busy practice.

There are new duties calling for a high degree of disciplined intelligence; to quote a recent article, "The knowledge of life and disease represented by the average D.D.S. degree is certainly deplorably deficient." How are we to remedy this? Give our young men a thorough medical training. Dentists are specialists only in their own handiwork, but the ground work is uniform and the demand for individualized education emphasizes the whole difference in our chosen tasks and ignores the great similarities. The technic of our branch of the profession, then, appears only as a small variation of the work in which we all share. The higher the level on which professional specialization begins, the more effective it is. And, again, "The higher the profession, the more nearly is the whole man working in every act and the more, therefore, is a broad general education necessary."

How well I remember Professor Joe Le Conte's likening of the modern system of education to the great sequoia, in which the primary and secondary schools were the rootlets and roots, the college culture courses the great bole, and the coming out from it at various altitudes as specializing branches, were the group of professional schools that make up the university. The trunk thus dividing grew higher and smaller, but persisted as the principal member all the way, until the topmost reach of pure culture was highest of all. Specializing without culture he likened to the low-branching bush, with no hope of reaching any fair height, and that the great branch of this tree of knowledge that deals with the study and care of the human body should spring from the main trunk after a considerable height of culture, at least that of the college curriculum, which Dr. Le Conte likened to the unbranching trunk, was the contention made in the former paper already mentioned. Without this no standing among the learned professions can be had at all. The half-light of the forest depth can not be grown out of at any less altitude.

It is equally clear, also, that the great branch, the study of the human frame I have spoken of, must go out from the culture trunk of the university tree as a whole. The least consideration of its logical relations to the

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

general culture and to other branches of knowledge will show the justness of this statement. And, having thus gone out from the main trunk, there is plenty of room for a considerable outward and upward reach of this great branch before it begins to subdivide into the various specialties, as the care of the various portions of the human body. So viewed, the mouth has as much relation to medical science, as a whole, as has the care of the eye, the ear, or, indeed, any other organ or group of organs.

He would be a superficial reasoner who would deny the great culture value of the medical course. Dr. Le Conte himself found it a firm foundation in its hold on physics and chemistry and a whole group of other sciences, and yet more in its cultivation of the habits of scientific observation of facts and logical reasoning from them for the stately structure of his own scientific attainments. The man who has taken it is a doctor, with none of the weakening qualifications of D.D.S., connoting a lesser scientific rank.

Most dental schools of the present time are at the mercy of the demands of the day and age, and their students are the product of the surroundings, not the choice of the school. An ideal professional school would be one that exists for its work alone, for scientific investigation and practical instruction not given by busy wage earners.

The dentist of to-morrow can not be the same sort of man as the dentist of the past, whose own little sphere has been bounded by thirty-two teeth. He must be the carefully educated student in the medical branches, plus the dental specialties, and you can only make him so by following the same educational plan as in preparing the doctor of medicine. Without the requisite medical education, the ordinary mechanically expert dentist is not competent to practice his profession—he can only exercise a mechanical dexterity, but with the proper education he not only exercises the same dexterity, but he has professional ability.

The mouth is a fairly good barometer of the whole system, but your merely mechanical man, as contrasted with the dental specialist in medicine, is not competent to read it, and he does not. Why? How can any man untrained in medical science understand the problems presented to him in the condition of the mouth? We all know how exceedingly often some affection of the mouth or teeth is but an indication of a general systemic disturbance of metabolism; and, on the contrary, how frequently we see a faulty dental anatomy causing nutritive derangements which are puzzling to the physician who is ignorant of the large part played by the mouth in general alimentation. These things can not be comprehended by the merely mechanically trained dentist, as distinguished from the dental specialist, any more than they are intelligible to the physician whose training has omitted all reference to the mouth as a vital part of the alimentary canal. He who would in the future confine his professional work to conditions involving the mouth and teeth—the dental specialist—must be a broad diagnostician; he must know the relation of the mouth to the general system and he must interpret what he sees in the mouth in the light of his general medical education.

To bring about this condition—a condition which must surely come with the passage of time—the same preliminary training in the academic sciences will be required, whether the student intends to practice general medicine or surgery, or to specialize along the lines of ophthalmology, dermatology, orthopedic surgery or dentistry.

The same general medical education must also be required, no matter to what special region of the anatomy nor to what special line of work the student intends to confine himself eventually.

What will be the results of this medical education? When this is accomplished what is going to become of your dentist? Practical life demands a division of labor; therefore, the specializing of the individual. There will be a division of the product just as in general medicine, and the natural ability of the individual will show itself. Some are going on plugging teeth, but better able, not less equipped for that work, for this higher education is not a question alone of preparing great men for great things; it must also prepare little men for greater things than would otherwise have been possible. Another lot are going to take up broad scientific work and research—not merely the mouth, but the mouth as merely a part, and the world will be spared from lots of trouble. But he who takes up the mechanical side of dental medicine has a broad and an inviting field of work before him. Thus far the orthopedic surgeon and the ophthalmologist who confines himself to refraction are most highly skilled mechanical specialists in medicine, but the medical dentist of the future will stand with them.

Consider the remarkably high degree of mechanical skill developed in the proper adjustment of a plaster jacket! Think of the tremendously complex Wullstein apparatus, devised for this purpose, and consider a man with no mechanical skill, in spite of any amount of medical education, attempting to apply such a jacket!

Dentistry, as well as orthopedic surgery, requires this highest kind of mechanical ability—take the apparatus used in orthodontia, for example; its construction and application call for the best mechanical skill, but they need back of that the academic training, or they don't reach the elevation. The real professional man should possess the resources of a highly developed, reasoning faculty, which comes only after years of systematic pursuit of what might be called higher or university study. It is this broad mental training that makes better dentists and better men. We are not only professional wage earners—we live for our friends and our nation; we are in contact with nature and science, with art and literature; we shape our town and our time. Let us, then, provide the kind of men who know how to think.

Imagine a profession of mere operators; professional men! Not so; mechanical artisans. The hope of the profession lies not in fitting a system of instruction to the capacity of unpromising students, not in "substituting intellectual milk for intellectual meat, aye, even in giving this milk in small quantity because of the puniness of the babes; but in choosing students equal to the requirements of an advanced method of instruction and substituting capable men for the class that now fill our colleges."

Turning out men with broad, well-balanced minds, with the faculty of judgment, strengthened by the mastery of principles rather than the acquisition of information. So much of the groundwork of medicine and dentistry is held in common that it is a wasteful folly to teach it in separate schools rather than in one well-equipped and well-manned institution. The cutting out of this unnecessary duplication of work is the spirit of the age and the method of much that we call our modern advance.

To summarize this point: The things that are purely ground work, physics, inorganic chemistry, and all the branches that make for the building up of the man able to see clearly, to imagine vividly and to reason correctly, as Dr. Henry Van Dyke puts it—these should be given in college. Then, all the studies necessary to the understanding of the human anatomy, physiology and hygiene should be taken in a medical course; then, and then alone, is it time to specialize on oral surgery to make a dentist. It used to be said of Cuvier that, given a single bone, he could construct a whole animal, but he never arrived at that point by the study of one kind of bones only. Rather it is the method of to-day to study the whole skeleton, yes, and all the other parts of an animal as well, in order to understand one bone.

"Great truths approach slowly and dwell a long time with small minorities." Progress is the law of this American race, which stands for all that's best; truly it is a race which knows no rest. Was it not Macaulay who said, "A standing point which was yesterday invisible is the goal to-day and will be the starting post of to-morrow?"

WHAT WILL PROBABLY BE THE DENTAL EDUCATIONAL STANDARD FOR THE COMING DECADE?*

CHARLES C. CHITTENDEN, D.D.S.
MADISON, WIS.

At the last meeting of this Section, at Atlantic City, in 1904, a symposium on dental educational standards was read, which was exhaustive and thorough in its character. In a paper presented at that symposium I had the honor to report chronologically the various facts as they had transpired, during the current year, concerning the attitude of the individual dental schools and the National Association of Dental Faculties toward the newly inaugurated four years' college course.

It had become apparent that a large number of the smaller and financially hampered schools were determined on returning to the three years' course.

This Section, at that time, in its discussions, expressed, in no uncertain terms, its entire disapproval of any such retrograde action.

Immediately following the meeting of this Section came the annual meeting of the National Association of Dental Faculties at Washington, D. C., where the whole subject was gone over and discussed very exhaustively, with the final result that, by a close vote of twenty-four to twenty-one colleges, the four years' course was upheld. This occurred in the early part of June. Almost at once following the adjournment the *ad interim* committee began to receive the resignations from membership in the National Association of Dental Faculties of a number of schools which were opposed to the decision at Washington to continue the four years' course. These resignations created such a panic in the ranks of the colleges that the *ad interim* committee was finally induced to call a special meeting of the National Association of Dental Faculties to be held at St. Louis, July 18, 1904, whose sole purpose should be a reconsideration of the final decision made at Washington, the month previous, to continue the four years' course.

At this special meeting there were, of the fifty-one colleges in membership, twenty-eight represented. By a vote of 26 to 2 (being by a majority of one of the total membership) the four years' course was revoked and a three years' course of thirty weeks in each year was adopted in its place. The public announcement of this distinctly retrograde step (taken by a bare majority of one of the membership of the college association) came as a distinct shock to the rank and file of the profession. There was no semblance of an off-set in the way of increased standard requirements for admission to the college course to, in some measure, soften the baldness of the action. The outside world was simply made suddenly aware that the National Association of Dental Faculties, without waiting to graduate a single class or man under the vaunted higher educational system which that body had spent at least three years in elaborating, and had then declared to the world as absolutely necessary to properly fit the student for the dental degree, had, without explanation, struck its colors and surrendered. The one saving phase of the whole transaction was the fact that practically one-half of our colleges had been opposed to the change and had only acquiesced in it "to save the Faculties Association."

The examiners of the United States had been loyally standing behind and ready to protect the schools in their higher standards in every way. To them this bold retrogressive step called for immediate action. A blow had been struck, for commercial reasons only, at the established standards, and struck, too, by our National Association of Dental Faculties! All the schools of the better class had been obliged to yield to the inevitable and lower their standards—all save one, whose noble independence but makes the situation appear the more pathetic.

The annual meeting of the National Association of Dental Examiners was held late in August, 1904, at St. Louis. It was apparent, from the first news of the "retrogression," that something must be done to retrieve the situation before the world, and the examiners rose at that meeting to the occasion. The following report from the committee on colleges, preceded by a careful résumé of the entire situation, was unanimously adopted:

> Your committee would therefore recommend that this association establish at once, to go into operation not later than the opening of the school year of 1905-6, the educational requirements, for admission to the dental college course, of graduation from an accredited high school or its full equivalent, all examinations of credentials and equivalents to be placed in the hands of an acceptable appointee of the state superintendent of public instruction where not otherwise provided for by law.
>
> In view of the present disturbed and unsettled conditions existing in dental educational circles, and with a belief in avoiding all unnecessary disturbances of standards at this time, your committee would further recommend that no change be made at this time in the present requirements of this association of not less than 28 calendar months of college attendance for graduation.

By what had occurred the trust of the examiners in the ability of the college association to maintain good faith under certain exigencies was so badly shaken that all standing resolutions which in any way interfered were rescinded, and the committee on colleges was instructed to prepare a new list of recommended colleges, based on the acceptance by the individual schools of the standards declared in the above report. The work was to be done independently of the National Association of Dental Faculties.

After having spent many months in correspondence and careful conferences with many of our ablest teachers and scientists, the committee on colleges issued the fol-

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

lowing letter to the deans of this country, Feb. 14, 1905:

In consideration of the conflicting views as to dental educational standards which have existed for some time, the National Association of Dental Examiners at its annual meeting held at St. Louis, August, 1904, deemed it expedient, and necessary for the upholding of such schools as sought to maintain the standards already published to the world as the minimum that should obtain, to declare what educational standards should be required by the state boards of examiners as a criterion of reputability of the schools seeking recognition of their output.

This *ad interim* committee, which is also the committee on colleges, was instructed to inform all schools of the action taken, and directed to prepare a recommended list of colleges on the basis of the standards established at that meeting.

Feeling fully the gravity of the duty imposed, this committee has expended much effort in striving to arrive at a basis of fairness to all interests concerned, in carrying out its general instructions. The chief requirement established at St. Louis was that of "graduation from an accredited high school or its full equivalent" for admission to the classes of 1905-6.

In several schools and university departments this requirement is already in actual operation, and our committee finds a considerable number of other schools desiring to maintain it. All these, of course, will be placed on the recommended list. There are, however, other schools whose deans assert that to enforce at once this advance requirement would work a serious financial injury to their institutions.

The question of what would constitute a proper length of course for graduation from a dental college has always been left by the examiners to the colleges themselves, except that, after a school has announced to the public a certain course as necessary to properly fit a student for graduation, if it, for private or financial reasons, deliberately lowers its requirements in any particular, the question of good faith and reputability of that school becomes at once a matter for adjudication by every board in the country.

We, therefore, acting on authority of, and, *ad interim*, representing the National Association of Dental Examiners, which is the advisory body of the various state boards in their official acts, respectfully request that you authorize the committee on colleges to place your school on the recommended list of colleges by the acceptance of the following educational requirements for students, viz.:

For matriculation or registration, "graduation from an accredited high school or its full equivalent, all examination of credentials and equivalents to be placed in the hands of an acceptable appointee of the state superintendent of public instruction where not otherwise provided for by law," said requirements to be inaugurated not later than the beginning of the school year of 1906-7; and a college course for graduation optional with you of either four years of seven months each or three years of nine months each, this course requirement to be inaugurated the present year, *1905*.

It is to be expected that schools maintaining these standards will be protected in so doing by the several boards composing the National Association of Dental Examiners.

It is the intention of this committee to prepare and to publish the recommended list of colleges not later than April 1 next, in order to give all schools the earliest opportunity to announce these standards to the public. Therefore information as to your decision is desired as early as possible.

Very respectfully yours,

COMMITTEE ON COLLEGES.

The responses have been quite general and, on the whole, unexpectedly satisfactory. It developed that a large number of schools were only too desirous for the establishment of an educational requirement at once reasonable and at the same time so sufficiently advanced as to not only retrieve the unfortunate back step of 1904, but also to place their schools on a permanent working basis so advanced as not to be liable to material change for several years to come. As one dean expressed it, "This higher standard places us in a position to go ahead with our business, and we will not have to change again unless the Faculties' Association goes one better. It has been this uncertainty as to what was coming or what we were going to do next that had troubled me most. Now I feel as though we had something definite before us."

And thus it has happened that, up to this date, the acceptances have far outnumbered the refusals and the new college list is still growing.

The *rationale* of the matter being that while the National Association of Dental Faculties may and has set minimum bounds of requirement for its members, it can not and never will undertake to prohibit any or all of its membership from placing their individual requirements as much higher as they may see fit. The only chance taken by the individual school in so doing is as to the ability of its product to compete successfully in the market with that of the schools retaining the lower standards.

The question, therefore, resolves itself to this: Will the examiners, with the power of law behind them, keep faith and redeem the pledges made by their authority and in their name by their chosen representatives, i. e., stand by and judicially maintain the advanced educational requirements established by the National Association of Dental Examiners at St. Louis in 1904?

The faith manifested by more than a score of our foremost schools and universities in the integrity and honor of the examiners in this respect would seem to be a harbinger of a new order of things which will be, at least, paramount to commercial success in the conducting of educational institutions.

If the hopes herein foreshadowed shall become realities, a new impetus will be given to dental education, a better class of minds will be attracted to our schools, and for many years to come there will be no further disturbance in preliminary educational requirements for entering our dental colleges.

DISCUSSION.

DR. F. L. PLATT, San Francisco, said that a degree from a university is certainly commendable and necessary, but he thinks that it is hardly all that is required. A large part of dentistry is mechanical and must necessarily continue to be so. He believes that in addition to a university degree, if a young man is going to study dentistry, he should also attend a school of manual training. Dr. Platt has noticed that the students who have had some manual training do superior work. There must be a combination of these two kinds of training before one can become a good dentist. After a man has gained a knowledge of chemistry, physics, bacteriology and therapeutics, his training should be largely clinical. The greater part of dentistry can be taught by clinics, and Dr. Platt believes that each member of a class should be required to demonstrate his ability in the presence of others, and should not wait to learn to do this after he has acquired a degree. Experience in teaching operative technic has convinced Dr. Platt that so far as operative work is concerned, clinical instruction is far ahead of the lecture. He does not believe that dental colleges should be private corporations. Schools of law, medicine, theology and dentistry should be integral parts of state universities, with funds provided by the state and faculties paid by the state. At the end of the first six months, if a student does not display aptitude for the work, he should be advised to take up something else. Dr. Platt agreed with Dr. Carlton that a high school education is not sufficient. Dr. Platt attended a pedagogic meeting a year ago, and heard many people speak who were in favor of a four years' course in dentistry, but did not hear a single sound argument in its favor. He thinks that the course should be at least nine months a year and four years if necessary, but

to make the course four years at the expense of cutting down the length of each year, is not advancing. Students who have five months' vacation will not graduate from college as well equipped as students who have only three months' vacation. Some argue that the students get so tired they need five months' vacation. Others argue that students ought to have five months to work to earn money to finish their course. Neither of these arguments is worth considering. If the course is to be lengthened, let it be made four years of nine months each. A plan could be adopted requiring a degree in arts and letters for admission, as well as a manual school training, and then three years of good, earnest work would turn out good dentists.

Dr. M. L. Rhein, New York, said that possibly the colleges that have a six months' course are in the South, and they would have a six months' course whether it was three years or six. It has always seemed difficult to get southern colleges to give any lengthy term. The tendency in the northeast has been to increase the teaching term whatever the number of years. Dr. Rhein thinks the basis for dental education should be absolutely as high as that of medical education, and until that standard is reached dentists are below their true standard, and that is the only thing that keeps dentistry from being recognized as it should. It is the one thing that keeps students of the proper caliber from taking up this specialty. They do not care to place themselves on a lower plane than any of the other branches of medicine. This section should strive to make the requirements of dental education as high as that required for medicine, and to keep them up to that standard. Dr. Rhein thinks it impossible for a man to practice this branch of medicine without being thoroughly grounded in general medicine. The groundwork of medicine is recognized as being not only of value but of necessity, and while dentistry is a technical work, and while a technical school is of the utmost importance, without the scientific knowledge of medicine the dentist is at a loss to properly apply his technical knowledge.

Dr. A. H. Levings, Milwaukee, said that there are many subjects in the medical curriculum which would be of no use to the dentist, though a dentist must have some knowledge of the fundamental branches, such as chemistry, pathology, bacteriology, histology and therapeutics. He must have some knowledge of surgery and perhaps a smattering of medicine, but Dr. Levings thinks that the study of neurology, gynecology, obstetrics, dermatology, otology and allied subjects would be of no benefit to the dentist commensurate with the time spent in study. If the coming dentist were required to take a full course in medicine, he would have to spend an extra year in mechanical work, because the medical student's time is fully occupied. He can not complete the course of to-day in less than four years of eight or nine months each. Dr. Levings said that he has heard many say that the requirements should be put so high that but few dental students could meet them. The only consideration should be what is best for these prospective dental students. Dr. Levings appreciates as much as anyone that the more culture, refinement, education and mental training an individual has, the higher he can rise in his profession, and the more easily he can maintain himself, but it is not within the possibility of every prospective dental student or every prospective medical student to secure the standard. Such a course as is given now in dental colleges will train any man who has a high school education so that he can master all the problems pertaining to either dentistry or medicine. Those who have the time and money may take a medical and a dental degree, and before this an A.B. degree, and polish themselves as much as possible.

Dr. M. I. Schamberg, Philadelphia, said that it may take some time before dentists will reach a higher standard than that existing at the present time. To his way of thinking, there are two things of prominent importance in taking up this subject: one is the raising of the standard of the profession, and the second, which he considers even more important, is the placing of such men in the dental world as are able to render the best possible service to humanity. The financial status of the dental college should be absolutely ignored. It may be that the work of the stomatologist and the dentist will ultimately become separated before arriving at the desired goal. If that be the case, it will probably be best for humanity at large. Dr. Schamberg would prefer to see the various dental institutions under the control of state universities, so that the financial side of the question would not enter into it so much as the educational.

Dr. G. V. I. Brown, Milwaukee, said that in this question of dental education a distinct advance of some kind is wanted. The purpose of Dr. Chittenden's paper is to fulfill the crowning act of a long life that has been given freely to the upraising of the standard, that before he dies something definite may be accomplished in the establishment of a higher standard of dental education. Dr. Brown said that he drew the resolution in the faculty association regarding the four-year term, and he has made more or less of a battle at different times for the four-year course. It is useless to discuss at this time the value of such a course because for the time at least it has been decided to be inadvisable. He believes that the additional year could be secured with less hardship to the schools and with more likelihood of its being practical than any other advance. He believes every argument that has been made about the mechanical side of dentistry, and that since there can not be a four-year course there ought to be higher entrance requirements, and that the course should be at least nine months, or as near that length as possible. Dr. Brown is connected with schools in the South and in the West. He sees both sides of the question, but at the present time no plan has been suggested which is practicable for meeting the situation. When some one presents a plan which will carry with it a distinct advance, so long as it is an advance which will enable the colleges of the South, West and elsewhere to continue and to prosper, that plan will meet with approval, and when that time comes he has no doubt the examiners' and faculty associations will again be on a harmonious basis. Dr. Brown believes in the value of having dental colleges under state control, but even under this condition it is not all smooth sailing by any means. At this time it seems nothing beneficial can be accomplished by discussion alone.

Dr. H. P. Carlton said that he has never yet written a paper of this character nor spoken his thoughts along this line, that the discussion did not at once turn to the question of courses and years. He wants to establish foundation courses and to leave the length of courses and curricula out of the question. He hopes to live to see it proved that the dentist of the future is going to be a medical man. The more a man gets in brain development the better dentist he will be. A man can not be too broad and too scientifically trained to be a dentist.

RECENT PROGRESS IN MATTERS OF WATER SUPPLY AND SEWAGE DISPOSAL.*

GEORGE W. FULLER, C.E.
NEW YORK CITY.

Of the various topics in this branch of sanitation there is none which has received so much discussion during the past year as that of the proposed use of copper sulphate. This chemical has been proposed for various purposes, the chief of which are as follows:

1. As an algicide; 2, as a germicide for infected water supplies used without subsequent filtration for drinking; 3, as a germicide for the effluent of coarse-grained sewage filters prior to entering drinking water streams; 4, as a germicide in conjunction with a coagulant in the filtration of highly polluted streams.

COPPER SULPHATE AS A GERMICIDE.

Although copper sulphate as a germicide and disinfectant has been studied from time to time for many years, especially in Germany during and after the se-

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

vere outbreak of cholera in 1892, this question has recently pressed forward for attention, largely due to the very interesting bulletin prepared by Dr. Moore and Mr. Kellerman[1] and issued in May, 1904. A second bulletin by the same authors was issued in April, 1905, and it appears from it that more than fifty reservoirs and ponds have been treated during the past year with copper sulphate to remove various forms of algal life producing objectionable tastes and odors.

To repeat these various experiences is needless here, in view of their having been detailed elsewhere and summarized in the more important instances in the last bulletin referred to.

When attention was directed to this matter last year, as is usually the case under such circumstances, public opinion varied widely in regard to it. On the one hand, were those who approved and supported the proposition most cordially and were inclined to regard it as a cure-all, while, on the other hand, were those of a more dubious frame of mind who were uncertain as to whether with ordinary care the copper sulphate might not become so unequally distributed in the water as to become injurious to the people drinking the treated water, and who were somewhat skeptical as to the ability of this chemical to kill vegetable life, at least under some conditions.

As a result of various experiences, copper sulphate as an algicide now appears to be viewed somewhat more favorably than it was a year ago. When water infested with algæ is to be filtered carefully after treatment, the process appears safe, provided the copper sulphate is applied uniformly in small proportions and is precipitated by the water.

When copper sulphate is applied to waters used for drinking purposes without being filtered following the treatment, a number of eminent professional men have felt disposed to advise against its use until further information concerning it is available. This position seems to be a conservative and prudent one ordinarily to adopt at this time.

Doses of copper sulphate of one part in from 1,000,000 to 10,000,000 parts of water usually suffice to kill algæ. Sometimes the doses are much more dilute, and in a few instances the strength must be about one part per 100,000.

It is not clearly understood into what form the chemical is converted when applied to various waters. Also uncertain in the minds of some is whether or not the passing of an abnormally large proportion of the copper from the reservoir in a relatively small portion of water is due to disturbances of the precipitated copper.

In this review it is needless to discuss more or less conflicting evidence on a variety of topics allied to this subject. It is sufficient to point out that opinion is not harmonious to a satisfactory degree on the following points:

(a) Toxicity to man of copper sulphate and salts in quantities encountered under various conditions.

(b) Chemical reaction of copper sulphate with constituents of various waters.

(c) Immunity and stimulation of other vegetable growths.

(d) Effect of copper sulphate on various fish.

(e) Disposal of copper under varying conditions of application.

1. Bulletins Nos. 64 and 76 Bureau of Plant Industry of Department of Agriculture.

COPPER SULPHATE AS A GERMICIDE FOR UNFILTERED WATER SUPPLIES.

This use of copper has been widely studied in the laboratory and has been put into practice in a number of places where public water supplies are known to be of unsatisfactory quality and where high death rates from typhoid fever prevail. Some misunderstanding in regard to this subject has occurred, and the general public in a number of communities appears to have gathered the impression that copper sulphate applied with this end in view serves as a substitute for filtration. Evidently this is not the view of the government officials who have looked into this matter, as they claim that the process is applicable in places where filter plants have not yet been built, and where during the period of filter construction unfiltered water of a dangerous character is supplied to the consumers.

Another aspect of this same matter is, of course, the use of copper vessels, such as canteens, etc., for obtaining water free from objectionable germ pollution.

It is very clear that copper sulphate can not serve as an adequate substitute for properly constructed and properly operated filtration works. In the case of adequate filters giving poor efficiency due to improper supervision, it is debatable whether, other things remaining equal, copper sulphate would or could be used so as to insure better results. Where filter works do not now exist, the feasibility of this treatment may be considered. This also applies, perhaps, to the treatment of water in this way in small receptacles.

It seems to be the consensus of opinion of quite a number of prominent sanitarians that a final opinion on this proposition of using copper sulphate as a germicide for drinking waters without subsequent filtration ought to be deferred until available data are more complete and trustworthy than they are at the present time. When this condition of affairs is reached it is not probable, in my opinion, that there will be material differences of opinion among experienced sanitarians.

Laboratory data on typhoid germs artificially cultivated for comparatively long periods do not necessarily afford a reliable criterion as to the quantity of the copper sulphate required, nor the period of contact necessary in order to effect, or even to approach, sterilization under conditions of practice. Depleted vitality in this connection may quite likely be of as much importance here as it is in species determinations. Laboratory data, furthermore, are seriously involved by questions of osmosis and other features which, independent of the copper sulphate added, in laboratory experiments cause typhoid and other germs to die more quickly than can be relied on in practice.

Concentrations of from 1 in 100,000 to 1 in 50,000 seem necessary for sterilization of infected water. Experiences such as those recorded at Columbus, Ohio, by the city health officer and summarized in the last bulletin of the U. S. Department of Agriculture do not seem to cover sufficiently the various essential facts to entitle them to great weight. In fact, I am certain that there are many reasons for believing that in the experiences with the city water supply of Columbus too little is recorded of the actual condition as to infection of the treated water and also of the prevalence of typhoid fever after the treatment ceased to justify the conclusion that doses of copper sulphate of less than 1 per million actually destroyed typhoid fever germs in a few hours.

COPPER SULPHATE AS A GERMICIDE FOR THE EFFLUENT OF COARSE-GRAINED SEWAGE FILTERS.

Since it is now a well-established fact that coarse-grained sewage filters, more frequently spoken of as contact beds and sprinkling filters, are capable of producing at fairly high rates of filtration effluents of a non-putrescible character, sanitarians have given more or less thought to the question of the hygienic significance of such effluents, since it is known that they do not remove disease germs with such thoroughness as intermittent sand filters. Further, as these sewage filters seem to be the only ones available in some sections of the country, where porous layers of sand or gravel are not to be found, the sterilization of these partially purified sewages is a matter which doubtless will receive attention in the future. At present little need be said other than that the process is a somewhat expensive one, according to investigations at the Sewage Testing Station at Columbus, Ohio, by Messrs. Johnson and Copeland. They find that to kill typhoid germs in sewage effluents it is necessary to make an application of about 1 in 50,000, the cost of which at current prices is in the neighborhood of $8 a million gallons.

The composition of the sewage with reference to alkalinity and organic matter, temperature and period of contact are more or less important matters which require further elucidation. The applied copper salts in these proportions produce a noticeable precipitate, the deposition of which requires consideration.

COPPER SULPHATE AS A GERMICIDE IN CONNECTION WITH FILTRATION.

At Anderson, Ind., during the past winter, copper sulphate was applied to the water just prior to filtration and in conjunction with sulphate of iron and lime as coagulants. These experiments were made for a comparatively short period with a new filter plant, the construction of which was not at that time fully satisfactory in all particulars. The investigations were conducted by Professor Burrage on behalf of the city, and Mr. C. Arthur Brown, representing the contractors for the filter plant and also the American Steel and Wire Company, which places sulphate of iron on the market in large quantities. Several other bacteriologists and chemists were present, including representatives of the United States Department of Agriculture. The claims made of the beneficial result in killing bacteria by adding minute quantities of copper sulphate, such as 1 in one million parts of water or less, do not harmonize with a considerable amount of information obtained elsewhere. Especially inconclusive are tests for *B. coli communis* in 1 c.c. of water before and after filtration. Later tests have been made at a new filter plant at Marietta, Ohio, but the data are not yet available to the public. Still further tests are doubtless needed under a wide range of conditions before opinion on this phase of the subject may be safely reached.

WATER PURIFICATION.

Recent progress in this field has been confined largely to the application of the principles hitherto developed carefully along a scientific scale. It is highly gratifying to note that works are now being built for a number of the larger cities in this country, including Providence, R. I.; New Haven, Conn.; Hoboken, N. J.; Harrisburg, Pa.; Philadelphia, Pa. (partially completed); Washington, D. C.; Pittsburg, Pa.; Columbus, Ohio; Louisville, Ky., and quite a number of other smaller cities. Active steps toward securing filtered water also seem about to be taken at Cincinnati, Ohio; Toledo, Ohio; New Orleans; Troy, N. Y.; Wilmington, Del., and Minneapolis.

An interesting feature in connection with this subject is the number of reports made recently by prominent engineers in which filtration is advised of water supplies which a short time ago were regarded as of a quality not requiring filtration. The most prominent instance on record is that of the supply of New York City, where, as is well known, there has been an unusually low typhoid fever death rate for an American city for many years—since elaborate undertakings were made for the elimination of sources of pollution on the Croton watershed.

As to the extent to which filtered water from surface sources is now used in this country, reference is made to the important paper presented by Mr. Allen Hazen at the International Engineering Congress at St. Louis in the autumn of 1904. In the statistics therein presented, it is pointed out that in 1904, of an estimated population in the United States of 32,700,000 in towns and cities of more than 2,500 inhabitants, there are about 3,160,000, or 9.7 per cent., which are supplied with filtered water. Of this number, about 2,600,000 received water from mechanical filters, and the remainder, about 560,000, are supplied with water from sand filters. During the past four years, according to these statistics, there has been an increase of 70 per cent. in population supplied with filtered water, and this increase, from what has already been said with reference to large purification works now building or soon to be completed, will, no doubt, advance still more rapidly in the near future.

As still further indicating the extent of the present use of water filtration works, it was pointed out in the paper mentioned that, of all cities in the United States having a population of more than 25,000, there were 7.9 per cent. provided in 1904 with filtered water; 11.4 per cent. had filters under construction; 21.4 per cent. had filters either authorized or recommended officially; 31.1 per cent. had water of a sanitary character requiring either filtration or a new supply; 22.2 per cent. had water of reasonably satisfactory quality and probably not needing filtration for a long time, and 6 per cent. had water of good quality not requiring filtration.

There is no feature connected with water filtration of more interest to the sanitarian than the effect which these improvements in public water works produce on the health of the community adopting them. It is gratifying to note that a considerable proportion of the recently constructed filter plants are now operated in quite a satisfactory manner, while the larger ones are provided with superintendents possessing all the needed skill in chemical and bacteriologic technic. These more recently constructed filters, operated under intelligent supervision, have produced very marked reductions in the typhoid fever death rates in the communities in question, and, as pointed out in the paper by Mr. Hazen, they have affected also a material reduction in the general death rate. This latter feature is, of course, associated with quite a number of other factors, as is also true of reductions in typhoid fever death rates; but, generally speaking, it may be said that filtered surface waters in several communities have caused death rates to appear as low as in other communities similarly situated in which ground water of unsuspected character is supplied. Unquestionably, further investigation and elucidation are needed in order to establish clearly the significance of matters of water supply and sewage disposal with reference to vital statistics. In brief, how-

ever, it appears that pure water is a sanitary feature of predominant importance, and there is no doubt about the substitution of a pure supply for an impure one having in repeated instances reduced the death rate to an extent practically unequaled by any other single sanitary improvement.

Nearly all recent improvements, both as regards sand filters and mechanical filters, refer to those features of design which relate, first, to means of securing a more reliable and automatic control of the process, and, secondly, to means of reducing the cost of operation, largely by the elimination of hand labor, due to improved mechanical appliances. In mechanical filters, this has come about largely through automatic regulating devices and the larger size of individual units, and in sand filters in devices for reducing the labor in cleaning the filters. In the latter, matters have advanced even so far as to the question of considering mechanical scrapers for cleaning the sand surfaces (Pittsburg).

Recently the city of Columbus, Ohio, situated in a section where the water supply, both from surface and ground sources, is very hard, put under contract a municipal purification plant of 30,000,000 gallons' daily capacity, which will not only filter the supply, but will also enable it to be softened. While there are many industrial softening plants in this country,. and small town plants at Winnipeg and Oberlin, this is the first instance on record in this country where a large city has undertaken thoroughly to soften the water supply.

Much attention in the public press has been given to the recent method of treating the St. Louis water supply. This water, taken from the Mississippi river, has for many years been partially clarified by sedimentation in large open reservoirs. Early in 1904, as a preparatory step for the St. Louis Exposition, this water was further clarified in the same reservoirs with the aid of sulphate of iron and of lime as coagulants. In other words, the water was treated in a manner very similar to the treatment of sewage in the chemical precipitation works at Worcester and Providence and in many places in Europe. The result has been a far better clarified water than was the case previously. In fact, ordinarily the supply has been of satisfactory appearance.

Several statements by St. Louis authorities have appeared which indicate that this method is a complete and effective means of securing a water of satisfactory appearance and hygienic quality, and that filters are a superfluous institution. The facts do not warrant this position, as unquestionably filtration would improve the water supply of that city.

Sulphate of iron and lime in connection with filtration is a serviceable substitute for sulphate of alumina for some waters, but not for all. In some instances, the composition of the water makes it very difficult to guard against objectionable quantities of lime or of iron appearing in the filtrate.

PROGRESS IN WATER SUPPLY CONTROL.

There have been two steps taken in this country during the past year with reference to the control of water supplies which are of much interest to the sanitarian. The most notable of these is the establishment of a state department of health in Pennsylvania, with ample laws to bring to a higher grade of efficiency the sewerage and water systems in the various cities in that state, which has suffered quite severely for years from typhoid fever. It is gratifying, also, to note that the legislature in Pennsylvania has made a reasonable appropriation for carrying out these new laws in an efficient way so far as making it possible to provide a skilled staff of technical advisers and assistants is concerned.

The legislature of the state of New York also recently created a state water commission, with an appropriation of about $40,000. The object of this appears to be to investigate available supplies within the state with reference to seeing that there is an equitable arrangement made for the various large communities, including New York City, taking new supplies from sources well considered in the interests of all concerned. Projects for new supplies, it is understood, are required to be submitted to this state commission.

SEWAGE DISPOSAL.

I reviewed this branch of sanitation in its various aspects in a paper prepared on this subject for the International Engineering Congress held in St. Louis last October. In this paper it was pointed out that in towns of the United States of 4,000 population or over in 1900, of which there were 1,049, with a total population of about 28,000,000, there were about 20,400,000 people estimated to be discharging raw sewage into inland streams or lakes; about 6,500,000 discharged their sewage into the sea or into the harbors or tidal estuaries along the sea coast; while the remainder, about 1,100,000, were connected to sewage purification works.

As compared with most European countries, the population in this country is so scattered, the rivers are so large and the rainfall, for the most part, so much greater and more evenly distributed, that this relatively small proportion of sewage purification works indicates by no means that this country is so backward as some might seem inclined to think with reference to adopting purification works where they are clearly needed. There are, of course, quite a number of instances where sewage purification works are badly needed in this country; but, generally speaking, there are more efforts now being made toward the purification of the sewage of larger towns than has been the case hitherto. This is partly because of the status of local lawsuits and injunctions, and partly owing to the more adequate information now available indicating the best and cheapest way of purifying sewage under various local conditions.

Information on the subject of sewage purification still continues to be forthcoming each year from the important investigations which for 18 years have been systematically and uninterruptedly conducted by the Massachusetts State Board of Health at the Lawrence Experiment Station. In the annual reports of that board for the years 1902 and 1903 are especially valuable reports indicating the experiences not only with the various sewage purification works in that state, but also the conditions resulting from discharging the sewage of various cities under different degrees of dilution into neighboring water courses.

Generally speaking, it is found that nuisances are avoided when a stream provides a dilution during dry weather of about 3.5 cubic feet a second for the sewage of each 1,000 population connected with the sewers. Where manufacturing wastes are unusually extensive, it is sometimes necessary on small streams to provide a greater dilution than this to guard against nuisances. On large streams it is possible that this dilution may be slightly greater than needed in some cases.

As to that aspect of sewage disposal by dilution, which involves the question of infection of water supplies taken from streams a considerable distance below the entrance of sewage, it is to be stated that, while information has increased considerably, especially in con-

nection with the testimony recently taken with regard to the litigation over the Chicago drainage canal, views are not as yet clearly crystallized. It is largely a question of time interval elapsing under various conditions of stream flow between the point of discharge of sewage and the withdrawal of the water for drinking purposes at points below.

Elaborate investigations made by Drs. Jordan, Russell and Zeit indicate that the life of typhoid fever germs may be somewhat shorter than has hitherto been considered to be the case. This, however, is still a debatable proposition, notwithstanding the general acceptance of the idea that various species of bacteria exert a more or less antagonistic influence in water on typhoid germs. Parchment sacks have in some ways improved the technic of these studies, but at Columbus, Ohio, Messrs. Johnson and Copeland have found apparently that these sacks when free from punctures do not prevent motile bacteria from passing through them.

Information from all sources, when plotted on a diagram, indicates that about 90 per cent. of typhoid fever germs in waters of various classes will live in decreasing numbers for periods ranging from 3 to 13 days, although it is quite uncertain how long the last 1 per cent. survives. Some of these bacteria undoubtedly live for a considerably longer period than one month.

There are about 90 sewage purification works of artificial construction now in existence in this country, and serving, as above indicated, a little over 1,000,000 population. Recently, on an average about half a dozen plants in large towns or cities have been constructed each year.

Based on practical experience and observation in the sewage purification field, and on observations made at considerable length at the Lawrence Experiment Station and elsewhere, it may be said that when porous sandy soil is available at small cost, this still appears to be the cheapest as well as the best method of purifying sewage. There are about 40 such plants now in existence in this country, serving a population in the aggregate of about 250,000.

The principal objection to sand filters is their clogging during cold weather, resulting then either in a material reduction in rate of filtration or in by-passing the filters entirely. It is as yet uncertain how far it is advisable to give sewage a preliminary purification before application to sand filters.

In the South and West, where porous sandy soil is not available, or in the East where it is expensive at suitable sites, it becomes necessary to consider other methods of filtration. The two principal types of coarse-grained filters are called contact beds and sprinkling filters. In each instance, they are composed ordinarily of fairly coarse material, ranging in size from about one-half inch to two inches. A contact bed is operated by filling the pores of the filter, letting the filter stand for a short period and then slowly draining out the sewage. Ordinarily the filters can be filled in this way three times daily, but from time to time they require resting. This method, particularly when double filtration is practiced, permits an effluent to be obtained which is non-putrescible and quite satisfactory for discharging into a stream. With sprinkling filters the unfiltered sewage is applied to porous material in the form of a spray, either from revolving sprinklers or nozzles set in satisfactory piping. If need be, sprinkling filters in cold weather can be operated as contact beds. The fact that spraying devices (sprinkling nozzles) did not freeze up at Columbus during the past winter is perhaps the most surprising feature to those who then visited the Columbus sewage testing station. This being so, it seems safe to say that with sprinkling filters rates of filtration several times as great as with contact beds may be used; that is, rates in the neighborhood of 2,000,000 gallons an acre daily. In some instances, this advantage of sprinkling filters can not be readily utilized, owing to inability to secure sufficient head for their operation without resorting to pumping.

The effluent of these coarse-grained filters, while non-putrescible, is not so free from bacteria as effluents of sand filters, and they are quite turbid. Much of this turbidity, however, can be removed by sedimentation for a few hours.

Clogging is a more or less serious factor in all filter beds for sewage treatment; in the sand filter, clogging material accumulates in small quantities year after year, and it appears that ultimately there is needed to be scraped a portion of the upper surface of the sand layer. Present indications are that coarse-grained filters, receiving a partially clarified sewage, will require the entire filtering material to be cleaned once say in from three to five years, or oftener, if excessively high rates of filtration are employed.

Generally speaking, the removal of suspended matter from the sewage before filtration is an economy, enabling higher rates of filtration to be used.

Chemical precipitation is not now adopted for new projects, owing to the expense both of chemicals and sludge disposal.

Septic treatment ordinarily is helpful, as it causes from 50 to 70 per cent. of the sludge to be deposited by subsidence. Of this deposited sludge about one-half can usually be disposed of by bacterial action. The tanks ought to hold at least from eight to ten hours' average flow. Covers generally do not assist septic action in proportion to their cost. With an adequate design and skillful regulation, objectionable odors need not be feared with ordinary sewages.

Where septic treatment is applied to domestic sewages, available evidence indicates that several years may elapse between periods of cleaning out the sludge. Where street washings and trade wastes enter the sewers, septic tanks may require cleaning once a year or oftener.

SEWAGE POLLUTION OF OYSTERS AND OTHER SHELLFISH.

Evidence from various sources indicates that sewage pollution of shellfish needs correction in many places, both for the welfare of the public health and for the interests of the oyster industry, which suffers from "oyster scares." Means for suitable regulation and control are a live topic for discussion among sanitarians.

When sewage comes from a small community and affects large shellfish interests, it seems reasonable to provide for adequate purification of the sewage. When the shellfish interests are small and the expense of sewage purification would be relatively great, it seems logical to remove the shellfish. Intermediate conditions require different treatment, depending on various local conditions, which is also true of a large number of sewage disposal problems.

DISCUSSION.

DR. N. K. FOSTER, Sacramento, Cal., said that the question of water supplies and sewage purification to a person who is directly interested in public health is paramount to any other question. More preventable diseases can be traced to the water supply, and indirectly to the want of sewage purification, than to any other causes, barring, possibly, tuberculosis. The destruction of sewage in our state, California, comes more under

the health authorities than the water supply. Unfortunately, the health authorities have nothing to do with that except to keep streams from being polluted. Any municipality can take their water as they see fit, or allow any private corporation to do it without any permission from the health authorities. That is an unfortunate condition, which Dr. Foster hopes sometime to see remedied. The same condition exists in a good many of the Western states. In the protection of streams the health authorities have considerable power, and in this work, bearing directly on the health as it does, more can be done than in any other direction. The protection of streams from sewage appeals directly to physicians and health officers, because they know that the typhoid rate is something alarming all through this country. If not a quarter of the typhoid cases are reported, as has been stated, and nearly all will admit that a large proportion are not, what a terrible condition there is, with the large number of deaths that result and the amount of suffering that pertains to that one disease, a disease which is absolutely caused by the carelessness and want of information of the people. In a recent inspection of one of the principal rivers in California, Dr. Foster found everything going into the stream, and when he brought to the attention of the authorities the fact that they were throwing their sewage into the stream from which others were drinking below, some of them felt that he was interfering with their personal rights. One man remarked that the streams were made for sewers, although that town was taking water out of the stream farther up and throwing their sewage back into the stream, where the neighboring towns below took it out. It is a question that ought to have prompt attention, and the health authorities should be given the power to control absolutely the disposal of sewage and also the water supply. The use of copper sulphate is another question that is of great interest. Dr. Foster is a little fearful of it unless it is under good control. A company in California is working on that system, and claims to be able to purify any reservoir. In one reservoir it is reported that the water is coming through colored. The copper may kill some germs and the algæ, but algæ are not the worst thing in water. If water is going to be poisoned with sulphate of copper, Dr. Foster asked if it is an improvement on the germs. The bacterial count in water treated with copper is certainly very low, probably a good deal lower than in most cities in the United States, but the gas-producing germs are still there, showing contamination. Whether or not the typhoid germs are there can not be determined, but Dr. Foster believes that they are. He thinks that physicians should go a little slow before giving full sanction to the copper sulphate method of treating water, and have it studied a little more. If irresponsible companies are promising to do these things and pointing to a scientific body of men as authority for it, it will lead to untold trouble.

DR. M. L. PRICE, Baltimore, said that the effects of copper in small repeated doses have never been properly investigated. It may be of interest to those not acquainted with the fact that the oxygen-bearing pigment of the lobster's blood, corresponding to the hemoglobin of most animals and the chlorophyll of plants, is a copper instead of an iron salt. The modern sand filter beds for municipal water supply, and the contact and trickling beds for the disposal of sewage, mentioned by Mr. Fuller, are illustrated in the hygienic exhibit of the Massachusetts State Board of Health. All these methods of water supply and sewage disposal have been subjected to tests at the Lawrence Experimental Station, of which there is a model in the exhibit of the Section. Dr. Price said that he would be glad to demonstrate this exhibit to any one interested in water supply or sewage disposal.

DR. C. V. GENOWAY, Spokane, said that in Spokane there is some trouble about sewage, and he wished to ask for information. The authorities in Spokane are about to spend about half a million dollars on water-works, and he has been asking them to pay some attention to the question of filtration. It has been talked of, but nothing has been done so far. They seem to think that the water is good enough without filtration, but the Spokane Valley above Spokane is becoming very thickly settled, and in the course of five years the river banks from Spokane to Coeur D'Alene City, about 30 miles, will be a continual town, and unless something is done now, some day there will be a frightful loss of life in Spokane. The new mayor, elected two weeks ago, has partly promised to listen on the subject of filtration. Dr. Genoway said that he knows little about filtration, but he wants to learn something about it, and to get what available literature he can on that line to show to the Spokane officials. When he went in office as health officer there were a large number of wells throughout the city. The water was cooler than the river water, that being the excuse people had for using the well. He looked up the records and found that typhoid fever had been prevalent, and on tracing it back he has found that at least 65 per cent. of the cases were caused by drinking well water; therefore, he is closing up the wells as rapidly as he can and compelling people to use river water. The sewage system in Spokane is not very satisfactory; that is, sewers empty into the river above the city and all through the city. Spokane started as a little town, and wherever the people found a convenient place to run the sewer water into the river they did so, and that Dr. Genoway is trying to have changed.

DR. DENSLOW LEWIS, Chicago, said in regard to conditions in Chicago that extensive bacteriologic determinations have been made by certain health officials of Illinois, with the result that the water supply of St. Louis is found to be improved. Now, there is an explanation, which is probably true. The increased volume of water going into the Mississippi since the construction of the drainage canal has diluted the sewage, favored oxidation, and, by increasing the flow of the river, has tended to lessen or to destroy bacteria. At all events, the statement has been made, and Dr. Lewis believes that it is true, that the water in the Mississippi at St. Louis is really better now than it was before the construction of the drainage canal in Chicago. The matter of first importance is to have a pure and adequate supply. All cities can not, like Portland, have snow-clad mountains in their vicinity, nor can they all have spring water, but the endeavor should be made to have the supply pure and to have it adequate. Failing in that, the next thing is to see that the water is purified one way or another, as is now done in many cities. Dr. Lewis was surprised at the statement that in Columbus, Ohio, the first attempt at public filtration had been made, as he had always understood that Philadelphia had a public filtration plant which had proved very successful. In Chicago, the work is not yet done. The drainage canal is completed, but still many sewers empty into the lake. There has been under construction for years a system of intersecting sewers, the idea being to have all the sewage from the city flow into the intersecting sewers, to be finally emptied into the drainage canal. As a matter of fact, some localities drain into the lake. At one fashionable hotel on the lake, where the bathing facilities are extensively advertised, a hotel that has become a resort of southerners during the summer, the sewage enters one street and the beach is just around the corner. In that hotel there are usually victims of typhoid; Dr. Lewis was one of them last January. Although the water is not supposed to be used for drinking purposes, it is used in the kitchen and for bathing, and it is easily understood how infection may occur. In Chicago, and it is an important factor to be recommended in every community, publicity is advocated regarding the actual condition of the water. When the intake is contaminated, as occurs at different times, the fact is announced in the newspapers, and the people are advised to boil the water.' Of course, boiling the water is not all sufficient, but publicity is a step in the right direction, for it notifies the public regarding the actual condition of the water supply.

DR. E. A. PIERCE, Salem, Ore., said that two years ago in one of the meetings of the State Board of Health it was decided to look over the water supply of the different institutions of the state. Dr. Pierce's residence being in the Willamette Valley, he made an effort to inspect the water supply on that region. In Salem there was a mild epidemic of typhoid which started in Stayton, about 12 miles north of Salem. The sewage from one or two infected families was drained into a small creek which runs through Salem. The contaminated

water infected several people living at Turner, a few miles below. Later the reform school was in turn infected, though the pupils were forbidden to use the water for drinking; some of them did so and a number of cases appeared. In the penitentiary, where the water was used for bathing and for toilet purposes, there were a number of cases, and in the insane asylum, which also used the water, a number of patients were infected. A large number of samples of water were collected, and it was found that they were infected, and also that a large number of surface wells near the creek were contaminated. Despite all efforts along the creek and in the suburbs, the health officials were seriously handicapped on account of lack of an adequate sewerage system. After a time Mill Creek purified itself, and, after a few deaths, and a large number of mild cases, the condition of affairs was greatly improved. The city supply of water was overhauled. This is taken from the Willamette River, after passing through a large gravel screen, and, at the present time, it is apparently free from contamination. Of course, the use of Mill Creek water in the institutions has been abandoned, and the city is now as healthy as any. In the treatment of sewage in the suburban districts and in the outlying portion of the city, where there were no sewers, the septic tank system was adopted, as far as possible, and that method has been a great help. At the asylum farm, 6 miles northeast of the city, there is one septic tank which is accommodating the night soil of sixty patients. It has been inspected regularly since it was built two years ago, and is working splendidly. A large amount of waste is passing through it, and at the last examination the sludge at the bottom of the tank was scarcely perceptible, although it has never been removed. The scum on top of the fluid is six or eight inches deep, and the effluent is clear and not objectionable, the effluent passing into an open ditch. Dr. Pierce has one of these tanks at his home and it is working well. There is a large tank at the Chemawa Indian Training School, which is giving excellent satisfaction. Formerly the sewage of the institution of about 600 pupils and teachers was conveyed through open ditches a long way off across the field toward the river, and there was much annoyance and complaint regarding the bad odor arising therefrom. With the adoption of the septic tank, the condition has been entirely relieved, the effluent passing along the same ditch. The health officials instituted an investigation of the different institutions and towns along the Willamette River and streams tributary. These are more or less contaminated with sewage all the time. Oregon City established a filter, the water being taken from the river. The bacteriologic count of the water after having been treated by the filter, as compared with Bull Run water at Portland, is almost equal to it. It is hoped later to have the same plan adopted in other cities in the state. Mill Creek at Salem has apparently purified itself, but it is only a question of time, of course, when it may become contaminated again. Dr. Pierce declared that inland water ways should be protected against contamination by sewage, and the streams should be allowed to return to their virgin purity. He believes that the septic tank should be adopted for the treatment of sewage wherever the sewer can not be used, and in all suburban localities. Even in the large towns and cities he thinks that the same plan can be employed. The sewage farming plan as practiced largely in Europe has given excellent results. In reply to a question he described the tank at the asylum farm. It is ten feet long, five feet wide and four feet deep (the depth below the level of the fluid). The sewage enters at a slight grade from the toilet, and there is a pipe with an elbow that carries it about eighteen inches below the surface of the tank. This prevents any disturbance of the surface. The outlet is at the other end of the tank, on an exact level with the inlet, and is submerged to the same depth. The tank is built of cement, and is covered with a cement or iron cover. Most of the tanks have been sealed as described, but the one at Chemawa is not sealed, but has a shingle roof over the entire tank and a large air space above it. This tank treats the sewage of 600 people, nature has sealed the surface with a scum which is tough and leathery, and so the air is entirely excluded. Dr. Pierce does not believe that it is necessary to seal the tank, as nature makes that provision. The anaërobic bacteria thrive in the absence of light and air, hence the first thing nature does is to seal the tank. All, then, that is necessary is to protect it with a cover to prevent débris from falling into it. The tank at Chemawa is fifty feet long, fourteen and one-half feet wide, and four and one-half feet deep. There are two baffle boards, one about ten feet from either end and a wire in the center. A mistake was made in its construction, as it was not originally made for a septic tank, but was intended simply for a storage tank. The weir was too high and enough space was not left for the free passage of sewage over the weir. That, however, has been remedied. Mr. A. G. Strang, engineer at the State Insane Asylum, who has had experience in this line, says that he does not favor the weir or baffle boards. Dr. Pierce's object in advising the weir and baffle boards, particularly in large tanks, is to break the currents, and in all the tanks that he has been consulted about, he has had them put in and they have given perfect satisfaction. A tank to work properly should have sufficient water supply to fill and empty once in twenty-four hours, and should have a capacity of about thirty gallons to each person using it. There should not be any odor from the tank, for the reason that nature seals the tank, and the effluent should not be offensive. Dr. Pierce believes that the action of the aërobic bacteria on the effluent as it emerges into the air and sunlight completes the work that was begun in the closed chamber by the anaërobic bacteria. A sand or gravel filter could be attached with admirable results.

Dr. H. G. Beyer, Washington, D. C., said that he has always been surprised at the slowness with which the septic tank system has grown into prominence. Prevention of disease begins with the soil. Filtering and boiling the water after first allowing it to become contaminated through contact with polluted soil seems to him like putting the cart before the horse. If the soil were not polluted this filtration might be unnecessary. Human excretions are the most serious causes of soil pollution. If the soil were kept from this pollution by a good system of septic tanks, or by a proper sewage system a great deal of disinfection, Dr. Beyer thinks, would be unnecessary. He does not think that it would be extravagant for every block in town to have a space set apart for a septic tank. In this way every house in a city might be sure of sending its sewage into this filter; it would then not make any difference whether or not a sewer leaked or whether the sewage flows through a regular sewer or is taken care of by the ground, the soil itself remains unpolluted. It seems to Dr. Beyer that this is a very much more effectual method of sewage disposal than any other he can think of, and it is for reasons such as these that the slowness of the growth of the septic tank idea in the prevention of the spread of infectious diseases, is to be deplored. Of course, at first health officials would have to proceed very carefully in doing away with the filtration or purification of water, and that the latter procedure should be incidental to the imperfect disposal of sewage. The west coast is fortunate in its water supply, but unfortunate in its sewage disposal. The soil in large sections is a loose surface soil with a subsoil of hard pan, which is really lava and is absolutely impermeable to water. Any drainage will follow the subsoil for miles, so that water may be taken at one point containing infection coming from a great distance.

MATERNAL SYPHILIS.*

GEO. S. WHITESIDE, M.D.
PORTLAND, ORE.

Hereditary syphilis may be a transmission of disease from the father alone or from the mother alone or from both together. Maternal syphilis may be defined as only the disease of the pregnant woman, but to-day we may also consider, briefly, its influence on her offspring as well.

Syphilis in the mother, without paternal disease, is

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

rare; the reverse is common. The large majority of married women afflicted become so from their husbands. Bulkley records 85 cases out of 120, or almost 75 per cent. Obstetricians and gynecologists are daily called to examine pregnant women and often are the first to have a chance to observe syphilitic disease in the innocent young wife pregnant for the first time, and yet but brief mention is made of it in text-books and treatises on obstetrics and gynecology. The former are more than half devoted to operative obstetrics, and the latter almost wholly to operative gynecology. For almost half a century Ricord, Colles, Diday, Fournier, Hutchinson, Bulkley and others have presented evidence enough to convince the most skeptical that syphilis is a common disease and a serious menace to the happiness of marriage and of motherhood; yet the text-books, one copied largely from the last preceding, hardly even mention its existence.

The diagnosis of syphilis in married women, especially those in the higher classes of society, is surrounded by difficulties. As a rule, the woman herself is ignorant of the nature of her trouble and unobservant of trifling and transient symptoms. Her conscience does not accuse her of illicit intercourse and she is not on the lookout for evidence of disease conveyed through her marital relations with the man of her choice. She believes him to be as pure and above reproach as she herself is, and suspicion of the existence of disease in him is slow to enter her mind. It is well that this should be so, for obvious reasons, but serious obstacles confront the physician when the ignorant or unprincipled husband infects his innocent wife.

Remember at all times Hutchinson's advice "not to be overconfident in the diagnosis of syphilis," because when all the typical symptoms are present the diagnosis is plain and easy, but there are cases in which it is difficult or even impossible. It has been said that syphilis is a mimic, that at times it simulates almost every form of skin disease or mucous membrane affection or even may be confounded with tuberculosis or cancer. On the other hand, a disease at once so common and so far-reaching in its effects should not be long out of one's mind when studying gynecologic cases, and this is doubly important when it concerns the welfare not only of the woman herself, but also of the unborn child and its relative place in society, as well as the future of the family.

When the pregnant woman presents a typical chancre, exanthem and other symptoms, the diagnosis is easy and the course clear, but how often is a physician called to attend a miscarriage case in which the fetus has died in utero from some syphilitic accident or in which syphilitic disease of the placenta has caused the birth of a child too immature to live. Yet do not make the mistake of supposing that every macerated fetus has been the victim of luetic visceral disease or that every puny, premature infant is the victim of syphilitic mischief. Physicians know how common these accidents are when no syphilis exists and what a variety of causes may occasion the one or the other. Jonathan Hutchinson[1] warns us that intrauterine syphilis is the exception. In fact, he declares that he has never seen an infant surely syphilitic at birth. On the other hand, it is evidently impossible for an infant whose mother is syphilitic to escape infection in utero unless her disease has been so very recent that no time is given for its development before parturition.

Often the first notice the attending obstetrician has of the existence of maternal syphilis is in the development of the taint in the infant a few days or weeks after birth. Such cases are very distressing and often troublesome to the physician. There have generally been slight symptoms which should have been as danger flags, but which were so mild that they were overlooked or else have been explained away as the result of some other affection. Sometimes an ache or a pain is supposed to be neuralgia or rheumatism, sometimes a superficial skin trouble is not rightly diagnosticated. I have seen a case in which a well-known gynecologist opened the abdomen in search of extrauterine pregnancy only to find a normal intrauterine pregnancy and later to have it proved that the hemorrhage from the uterus, which had been the symptom leading him to operate, had been the result of syphilitic placental disease. I have seen more than one case of what were thought to be varicose ulcers of the legs in pregnant women heal rapidly and completely under iodid of potash, in spite of the fact that the venous return was still obstructed by the uterine tumor.

Do not mistake me. I do not mean to emphasize the specific taint as the most important etiologic factor in most puzzling cases, but I wish to urge physicians not to forget the possibility of it. I am aware that psoriasis, eczema and some other forms of skin disease are apparently aggravated by an intercurrent pregnancy, but that should not blind us to the possibility of a recently acquired syphilis. In genitourinary practice I have had abundant opportunity to notice the fact that many husbands are inconstant during the later months of their wives' pregnancies. It is human nature. However much we may deplore it and despise the man for it, let us remember the fact. Many a woman has become infected because of disease acquired by her husband when she was not physically able to satisfy his demands. Having committed adultery, acquired syphilis, infected his wife and, through her, condemned his offspring yet unborn, the husband is slow to acknowledge his unmanly conduct. As a rule, he rather hides the fact from his wife's physician, thereby often causing delay in the administration of treatment because of an incomplete or obscure diagnosis. On the other hand, if the husband does not pursue this course he goes to the other extreme, driven by remorse for what he sees he has done he tries to remedy the evil by a full confession to the physician. In such an event, the obstetrician's way is clear and his duty plainly not to wait for symptoms in the woman, but at once to begin treatment either by inunction or by the administration of gray powder as a prophylactic against the transmission of the disease to the fetus.

Should the fetus have inherited the disease from the mother, either as the result of so-called germ infection or from an intercurrent acquired syphilis beginning during gestation, but after conception, then what will be the prognosis for the child? Without treatment, the mother may miscarry or may bring the fetus to term. The latter is not at all uncommon. In that event, as a rule, the child seems sound and well at birth, but signs of inherited taint show at the end of two or three weeks. If the child survives the first acute, febrile outbreak of secondary symptoms, it will probably respond to treatment and very likely grow up an apparently well individual. Among the better class of patients this is generally the case. When the system is less able to withstand an acute febrile disease, as among the poor in large cities, the mortality is, luckily, much

1. Syphilis, edition 1901, p. 78.

higher. Even in cases in which some deformity of bone has taken place, as, for example, in hydrocephalus, antisyphilitic treatment often causes an absorption of the products of the disease and an arrest of pathologic growth, and in time the deformity is no longer noticeable.

Mercury is best administered to the infant by inunction, but it may be necessary to use the gray powder, in spite of its action on the bowels, which, if need be, may be controled by opium. Mercurial medication should be continued at least as long as there are symptoms or signs of disease, and many authorities advise it for at least a year. I believe it is best to compromise by keeping up treatment for two months after all signs have vanished. I have no doubt Hutchinson is right in thinking that mercury given in early infancy has a detrimental effect on the permanent teeth later. This can not be absolutely proved, however.

To sum up this brief paper, I would say:

1. Look oftener for syphilis, as the presence of this disease will frequently explain obscure symptoms.

2. In the pregnant syphilitic woman give mercury promptly and fearlessly. Only in this way can the health of the fetus be protected from the inherited taint.

3. Give the syphilitic infant every care and mercury. The child should recover entirely in a few months.

After thorough treatment the late forms of hereditary syphilis are rare. I will not discuss the principles which should guide us in putting syphilitic children to the breast. These have been fully and ably discussed by Fournier and others; besides, in these days of bottle-fed babies, the subject is not so important as it once was.

PULMONARY TUBERCULOSIS AS AN OBSTETRICAL COMPLICATION.*

CHARLES SUMNER BACON, M.D.
CHICAGO.

Probably from 1 to 1.5 per cent. of all pregnant women have tuberculosis in such degree that it can be detected if careful examination is made. Freund found about 12 cases in 1,000. Of these patients, nearly half were in a serious condition. The fact that only about 50 per cent. of the cases discovered were comparatively mild suggests the possibility that a larger number of mild cases could have been discovered if a stricter examination had been made. We have not a sufficiently large statistic from other clinics to justify the statement above made concerning the frequency of the disease, but it is probably true because the ratio given corresponds to the frequency ratio of tuberculosis among adults between 15 and 45 years. This ratio is obtained from the consumption mortality rate and the duration of the disease. According to the United States census of 1900, there are 252 deaths annually from tuberculosis in 100,000 adults between 15 and 45 years of age. In order to find the number of cases of tuberculosis in 1,000 adults, we should have to know the duration of the disease, and there are few data bearing on this point.

Hoffman repeats the common statement that patients live two years after the disease can be diagnosed. In the Phipps report the records given would indicate a duration of at least five years. From estimates given me by clinicians of experience, it would seem that an assumption of the average duration of the disease of five years might not be far from the truth. With this coefficient and with a mortality of 2.5 per mille, we would have a frequency of 12.5 per mille, or, in other words, about 1 in every 80 adults between 15 and 45 years of age has consumption. This refers, of course, to what we may call clinical tuberculosis and not to the pathologic condition of the individual. As is well known, according to the examination of certain pathologists, some tuberculosis is found in the great majority of postmortem examinations, showing that some time in his life nearly every individual has a little tuberculosis.

If, clinically, from 1 to 1.5 per cent. of all adults have tuberculosis, the proportion is about the same as in pregnant women. There is, indeed, very little reason why the ratio should be less in pregnancy, for it is rare that tuberculosis is a cause of sterility. The only conditions in which tuberculosis might be a factor in causing sterility are the tubercular involvement of the genital organs by a descending tuberculosis and the atrophy of the egg because of anemia, which either results in failure of ovulation or renders it incapable of fertilization. Both of these conditions are probably so rare that they are nearly negligible.

Using the ratio of 1 to 1.5 per cent., we should find that among the 60,000 women confined in Chicago each year from 600 to 900 are tubercular. In the whole United States, we should have, approximately, 40 times as many, or from 24,000 to 36,000. Although perhaps only three-fourths of these cases are of the advanced type, it is evident that the frequency of the condition makes it of great importance medically, socially and economically.

There has been much difference of opinion concerning the effect of pregnancy on the progress of the disease. Formerly the idea was prevalent that pregnancy improved the tubercular condition and even that it sometimes caused a cure. No doubt this idea was based on clinical observation and cases of improvement are occasionally observed to-day. Such an improvement may be attributed to a stimulant to general nutrition, an occurrence frequently seen, and to better general hygiene, including more rest, etc. That chemical changes in the blood caused by fetal products might be inimical to bacterial growths is not impossible.

In many cases, however, there is no doubt that pregnancy has a bad effect on the tubercular process. There may be a rapid development of tuberculosis in the lungs or an acute miliary fever may appear. The bad effect is much more apt to appear when the disease has already progressed so far or when nutrition is low from other causes. For this reason nausea and vomiting or other gravidal toxemias may increase the danger.

In the latter part of pregnancy disturbances arising from pressure against the diaphragm by the growing uterus may interfere seriously with an already impaired respiratory function.

Labor is very apt to be an unfavorable factor in the development of the disease. In all severe forms the exhaustion from the loss of energy and from the depletion of the system is extreme and not rarely leads to an immediate fatal termination. The detrimental influence of the latter part of pregnancy and of labor is revealed during the puerperium, which is characterized by a rapid progress of the disease. The puerperium itself, with its usually enforced confinement in imperfectly ventilated and overheated rooms, is injurious and its

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

influence is added to that of labor. As a result, this period is always a critical one, even for milder cases and for those more advanced it is very dangerous.

The effect of tuberculosis on pregnancy is slight except in severe cases, when there is considerable fever and coughing. In those cases abortion is common. Placental or decidual hemorrhage, with injury to the egg, is much less common than in case of cardiopathies or nephropathies. Even when there is considerable emaciation and general nutritional disturbance it is somewhat astonishing how little the fetus suffers. There is less tendency to abortion than in complications of pregnancy with heart or kidney diseases.

The fetus may be infected, but this occurs only rarely. Probably such infection takes place when there is a solution of continuity in the placental partitions between maternal and fetal blood. As such a break in the walls is less common than in many other infectious diseases, like smallpox, scarlet fever, cholera, etc., so fetal tubercular infection is less common than fetal smallpox, fetal scarlet fever and fetal cholera. The chances are that the child will be born free from tuberculosis if abortion does not occur. It is likely that it may possess a predisposition to the disease, but the pathologic condition is not conclusively demonstrated.

In mild forms of the disease, labor may be quite normal. In emaciated patients both the uterine and the abdominal contractions may be feeble and inefficient. This failure in the forces of labor, combined with the weakness of the patient, is an indication for an early interference.

Generally it is the puerperium which shows most markedly the effect of consumption. When the exhaustion of labor is considerable the patient is apt to die in the first two or three succeeding days; in milder cases she is quite apt to go to pieces. Even those who hold that pregnancy generally benefits a mild type of the disease admit that the puerperium almost always unfavorably influences it.

The French are fond of concisely summing up the treatment of tuberculosis complicating pregnancy by applying the formula of Peter concerning cardiopathies to these cases, *Fille pas de mariage, femme pas de grossesse, mere pas d'allaitement.* So far as the rule applies to the unmarried, it can be endorsed without question. If a tuberculous process undoubtedly exists there can be no excuse for a marriage that can only result in dangerous complications. The only difficulty arises when we have to decide for those apparently cured. Here each case must be decided for itself. The sexual life is a source of danger independent of the fear of pregnancy.

In this connection, the question of imposing restriction on the marriage of tuberculous individuals by legislative enactment might be discussed. As is known, such propositions have been made in some states. To one who is in touch with the spirit of our people, it seems very doubtful if such a law could be carried out. The machinery for its execution would be too repulsive to the prevailing sentiment. I believe that much more can be accomplished by educating the people concerning the infectiousness of the disease and the ravages caused by it.

When we come to consider the case of the married woman we may have to make a slight exception to the French rule. Suppose we are consulted by a man and wife in comfortable circumstances. They desire greatly a child. The wife has some tuberculous involvement of the lungs which is not extensive but which will not entirely yield to any treatment that has heretofore been instituted. She can be put and kept in the best hygienic surroundings during her pregnancy and puerperium. The child can be cared for in a proper manner. If such a woman, fully informed concerning the risks she runs, refuses to be dissuaded, I think the physician may rightfully consent to care for her in her attempt to secure the much-desired pregnancy.

This is a rare case, however, and interferes but little with the rule that prohibits pregnancy in a tuberculous wife. Certainly in all cases in which the circumstances do not allow such an ideal management of the pregnancy and the puerperium, and when the woman must care for her house and remain a large part of the day indoors or removed from pure air, when she can not have sufficient nourishing and well-cooked food and when she would be obliged to nurse and care for her baby, conception should be absolutely forbidden.

For these patients, artificial sterilization may be a legitimate operation. Its permanent consequences should be thoroughly explained to both husband and wife in order that later recovery of the wife should not lead to censure of the physician for a mutilating operation. The probability of a recovery should be carefully weighed before making a decision. When some operation is determined on that one which does not remove the ovaries should be chosen. The vaginal resection of the tubes is generally the simplest and best, unless some other pathologic condition indicates a laparotomy, when, of course, the abdominal resection would be done. Pincus and others recommend his method of atmocausis, or obliterating the uterine cavity by burning it out with superheated steam. With proper apparatus and with experience in the operation, this method would seem a good one, but it has not gained adherents in this country.

When a probability of a cure of the consumption remains, so that a subsequent pregnancy would be allowable, or when for other reasons a sterilizing operation is impossible, some means of preventing conception may be advised. No physician of experience would feel justified to rely on giving the advice to abstain from sexual intercourse. The preventive measure should be advised only as a measure of last resort and not as preferable to a sterilizing operation. For many reasons it is less desirable and less scientific.

When we come to consider the case of the tuberculous pregnant woman we must decide whether or not the pregnancy should be interrupted. The decision will depend largely on the circumstances of the patient. If she is able to afford the best of care during pregnancy and puerperium and also to care for the child, she should be encouraged to continue the pregnancy, especially if the tuberculous process is not very advanced. When, on the other hand, she can not hope for hygienic surroundings and good food, nor for help in the care of the child, she may be advised to have an abortion performed. A complication of tuberculosis with heart or kidney disease, with hyperemesis or with other serious acute or chronic disease furnishes additional indication for inducing abortion. The operation should be decided on before the twentieth week. Later, an attempt should be made to carry the child to the period of viability.

Rapid emptying of the uterus is the best method of inducing abortion. Anesthesia properly administered is not contraindicated. I believe that ether is the safe anesthetic here, as in other cases.

If pregnancy be allowed to continue, the patient should be treated according to the principles now accepted as the best adapted to control or to cure the disease. According to these principles, the essential rules of treatment direct: 1. She should live in the open air as much as possible, that is, she should breathe fresh, pure air. 2. She should be well fed with good, nutritious food. 3. She should avoid exhaustion or fatigue. Whether in carrying out these rules she should remain at home or go to a sanitarium depends on individual circumstances. I do not see that the details of management differ from those in any other case of consumption. Symptomatic medicines like those for coughs, night sweats, etc., are to be administered as necessary.

After the period of viability is reached, the question of inducing labor will come up for decision. Rapid or gradual failure of nutrition, due to loss of appetite or to stomach disturbances or to exhausting discharges, will be an important indication for the operation. Hemoptysis would be an urgent indication. Exhausting, uncontrollable cough or laryngeal or pleural complications or other severe respiratory disturbances, like dyspnea, may call for artificial delivery at the earliest possible moment. As in all other cases of induction of labor, the operation should be postponed till the thirty-sixth week unless the urgency of the symptoms calls for earlier interference. The method of operation should be that which furnishes quick relief from the urgent symptom and which also assists and hastens labor. For these reasons the bougie method should not be employed. The cervix may be dilated if necessary with instruments or with the finger, the membranes ruptured and then, after the escape of the liquor amnii to relieve the symptoms due to pressure on the diaphragm a metreurynteur is introduced through the cervix into the amniotic cavity. In the most urgent cases, a vaginal Cesarean section may give better chance of saving both mother and child. With this operation, as well as with any operation during labor for which anesthesia must be employed, oxygen should always be provided for eventual need.

The proper management of labor in a consumptive involves a careful watching of the patient and efficient, timely interference on the first appearance of evidences of exhaustion. Oxygen should be used freely and strychnin as a tonic should be given hypodermically as indicated. Post-partum hemorrhage is not particularly common in such patients, but its possibility should be anticipated and provision made for instant control. Subcutaneous injections of physiologic salt solution may be necessary and the solution must be prepared beforehand.

The well-known fact to which I have already referred, that the puerperium is the period of greatest danger to the mother, should prove that it ought to receive the most careful and rational management. For the first forty-eight hours the most imminent danger is from circulatory disturbances. Oxygen, strychnin and physiologic salt solution, with most careful watching, are our weapons to combat this danger. Later, we must look after nutrition and fresh air. The common fear of cold air, which leads to the imprisonment of the patient in an overheated, unventilated room, is often chiefly responsible for the rapid emaciation. There is no reason why she should not be carried to an outdoor bed or couch, where she can lie most of the day unless the weather is very bad. This plan may be begun as soon after labor as the immediate danger is passed. If the patient lives in a large city in an apartment she may still find some benefit from a porch. If the air is very smoky and harmful she should be removed to a proper sanitarium or to better surroundings if possible within a week of her confinement.

Under no circumstances should she nurse the child, and it should not be kept in the same room. When possible it should be fed by a wet nurse. There is no danger to the wet nurse from the child, for it is almost never tuberculous; of course, arrangements for the feeding and care of the child should be made before it is born.

It may be difficult to make a differential diagnosis between tuberculosis in the puerperium and genital wound infection. The absence of the local symptoms of the latter with the history of the fever should enable us, generally, to separate the two diseases. Complication of puerperal fever with tuberculosis of the puerperium is, of course, of greatest danger.

We all know that there has been considerable advance in the method of control and treatment of tuberculosis in the last few years. A large ray of hope has partly dissipated the depressing gloom of the despair of the past. This improved outlook for the future is due to the advance of our knowledge of the disease and to the demonstration that it can be cured by hygienic management. I have tried to call attention to the importance of applying these more rational methods of cure of consumption to the disease when complicated with pregnancy, labor, and the puerperium. I believe that by a careful but thorough use of the fresh air, rest and feeding cure, many more of the 30,000 consumptive pregnant women in the United States can be brought safely through pregnancy and the puerperium and eventually, perhaps, be cured. This management before and after labor and a free use of oxygen in labor and in the subsequent disturbances are the points to which I desire to call especial attention.

DISCUSSION.

Dr. Mariana M. Bertola, San Francisco, mentioned one case of transmission of tuberculosis to the fetus. The mother was unquestionably tubercular. She was put on treatment similar to that advocated by Dr. Bacon, and carried the child to term. The child was emaciated, undersized and presented symptoms of tuberculosis. It was removed from the mother, fed artificially and kept out of doors as much as possible. After two months it died, and at the autopsy tuberculosis of all its organs was found. Although the mother still has bacilli in the sputum, her general condition is better than before. She has not had any more children.

Dr. J. F. Taussig, St. Louis, said that this condition occurs often and the general practitioner should know more about it. As a result of two cases in his practice he made inquiries, and was surprised to find how few general practitioners realized that there is justification for the induction of abortion or premature labor on account of tuberculosis. The question has not been discussed sufficiently. Every case should be judged by itself. In arriving at a decision the physician should be governed by three things. First, the site and stage of the tuberculous process. If in the larynx, the case is practically hopeless, and everything should be done to save the child. In such a case the physician should not interfere, because the mother's life is practically lost, but that of the child may be saved. A similar condition exists in a case of advanced pulmonary tuberculosis. In less advanced cases the physician should be governed largely by the weight of the mother. If she is not gaining in weight, he is justified in interfering; otherwise not. All such patients should be kept constantly under observation. Second, the state of pregnancy. Physicians would be more inclined to interfere in the first half of pregnancy than in the last half when they must consider the prob-

ability of saving both the life of the mother and the child. Third, the social condition of the patient. As Dr. Bacon mentioned, hygienic treatment is of the utmost importance. Hence, the physician would be more inclined to interfere in the case of a woman belonging to the working class than in the case of a woman of a higher or better social plane with whom correct hygiene can be carried out. It is to be hoped that in the future, when sanatoria are more numerous, physicians may be able to do more for the poorer class, and thus be able to save the lives of these women, which is now impossible in many cases.

DR. EFFA V. DAVIS, Chicago, said that physicians are too ready to say to a pregnant woman that they will relieve her of her burden if she is not well. In fact, the laity has come to expect that of physicians. Dr. Davis does not see any reason for performing an abortion just because a woman lives in bad surroundings and is unable to care for herself. The life of the unborn child should not be destroyed, except for some very good reason. If it is only to curtail the misery of some poor woman of the slums, it is poor practice. It is far better to save the life of the child than to prolong the life of the unfortunate mother. The position of Penard of never producing an abortion is a much safer one than the one where physicians are expected by the laity to do it on any pretext. Dr. Davis has found that many women have syphilis, acquired not through their husbands, but through their fathers. That kind of syphilis is likely to baffle the physician. A child came under Dr. Davis' care born of a mother who was syphilitic through her father. She had given birth to many syphilitic children, none of which lived. The husband of this woman was perfectly well. Dr. Davis treated the woman all through her pregnancy, and she gave birth to what seemed to be a healthy child. The child was treated with bichlorid baths after the appearance of a rash when five weeks old and apparently recovered. After seven years the child had a syphilitic iritis. Physicians ought to be very careful about saying that they have cured patients with two or three months' treatment.

DR. W. O. HENRY, Omaha, protested emphatically against producing abortion because the mother is tuberculous. The physician's business is to save life, not to take it. Of course, it is unfortunate when a tuberculous woman becomes pregnant, but the physician has no right to do a criminal act because of that. He should use all possible means to help the mother during her pregnancy and puerperium, and should endeavor to save both the mother and the child, but he should never take the life of the child.

DR. J. H. CARSTENS, Detroit, agreed with Dr. Bacon, but said he believes physicians can do more by education. People know that consumption is a dangerous disease, and that it is infectious, and they do not marry a consumptive if they know it. Young men and young women consider this. He does not agree with Dr. Bacon that physicians are justified in sterilizing a woman because she has consumption. That is absolutely wrong. It is never justifiable under any circumstances. As far as producing abortion is concerned, Dr. Carstens thinks that Dr. Davis hit the nail on the head, but he would not say that physicians should never do it because there are exceptional, rare cases. Those women stand confinement pretty well. Dr. Carstens has been asked to operate for fibroids, lacerated cervix, etc., for the purpose of relieving some condition of the system which he has cured with mercury or iodid of potash without operation. Syphilis is more common than any other disease except hysteria. It produces almost every symptom, in season and out of season. In obscure cases, the physician should think of syphilis by giving iodid of potash, and he is quite likely to cure the patient.

DR. F. D. DONOGHUE, Boston, said that aside from the moral aspect, the induction of abortion is a confession that the physician can not cure the disease, and is a temporary makeshift, at best. The patients in whom Dr. Bacon would produce abortion are almost sure to die. In the incipient case, the patient is almost sure to recover under good treatment. A woman with emaciation, great loss of flesh, high temperature, pregnant or non-pregnant, is sure to die. Why sacrifice a useful life by producing abortion? The function of the physician is to advise against pregnancy in these cases, and if the advice is not followed, the parties responsible for increasing the danger are to blame, not the adviser. The time has gone by when it can generally be said that the profession will protect patients from the effects of their own acts.

DR. C. S. BACON said that it is difficult to determine in a given case whether a child is born with tuberculosis. Dr. Bertola's case is very interesting, and it would be well if we knew that the patient was not exposed to tuberculosis after birth. If the child was exposed, it is not unreasonable to assume that the child contracted the disease in that way. The case as related does not prove the transmission of tuberculosis. He said that Dr. Taussig's indications for the induction of labor and abortion are exactly in line with his own views. Dr. Bacon said that a careful reading of his paper will show that in regard to the right to induce abortion in all cases of tuberculosis complicating pregnancy he agrees entirely with those who oppose it. He has no doubt that the suspicion of the presence of tuberculosis is often improperly made a reason for inducing abortion, and so far as the general objection goes, he agrees with Dr. Carstens and others; but when the matter is considered from the practical standpoint, the question is a different one. Dr. Donoghue seems to believe that tuberculosis is not so very dangerous, in the incipient stages at least. It has been demonstrated that even in the incipient stages the disease progresses rapidly, and the woman may be in a very dangerous condition or may die during the puerperium. The woman with a rather serious complication is not necessarily condemned to death because she becomes pregnant, if the pregnancy is removed at once. Certain indications for the induction of abortion are recognized, although the Catholic Church prohibits abortion under any circumstances, and there is something to be said for that side; but if any reason for the induction of abortion is recognized, or if it is ever justifiable to destroy the child in utero, physicians must recognize that there is an indication in those cases. Of what use is it to let a woman who has rather advanced tuberculosis go on and probably die during labor or in the puerperium? What will become of the child? The mother of a family is an extremely important member of society. Why should physicians say that they have absolutely no right to try and save her life, when otherwise she will bring into the world a child that will have no care after it is born, and therefore probably will die? Dr. Bacon said that he can not agree to the objections made by those who, perhaps, see too little of these cases, and whose objections are theoretical and not practical. Dr. Carstens objects to the induction of abortion and also objects to sterilization. His advice, if carried out, will favor the increase of tuberculosis by increasing the number of children born to tuberculous parents. Dr. Bacon knows of no objection, moral or otherwise, to sterilization. In the paper he emphasized that all the circumstances should be considered and that the patient should be informed of the situation so that she takes the risk and not the physician.

DR. G. S. WHITESIDE said that he does not quite understand what Dr. Davis meant by syphilis through the father. He doubts if she meant inherited syphilis, because there probably is no authentic case on record of syphilis having been transmitted to the third generation. Dr. Whiteside did not mean to imply that infants should be treated for only a few months. On the other hand, it has been demonstrated time and again that no matter how long antisyphilitic treatment is kept up in an infant, it does not bar the later developments of syphilis, such as syphilitic iritis or keratitis, bone lesions, syphilitic disease of the nervous system, etc. Although these late manifestations are more common in patients treated for only a short time, they are not unknown in those treated for a long period of time.

Medical Advertising.—Classify advertised remedies under four heads: Reputable, doubtful, semi-fake and fake. Therapeutically and ethically considered we should put into the first class only preparations whose constituents are known to the prescriber, and all others would and should be thus banished to the outer darkness of undoubted fakes.—Jackman, in *Journal of Medicine and Science.*

LACTIC ACID IN GONORRHEA.

SWITHIN CHANDLER, M.D.
Surgeon to Garretson Hospital. Gynecologist to Charity Hospital.
PHILADELPHIA.

One must realize that one of the many unpleasant sequences so often following a gonorrhea in the female is a cervical infection, accompanied by an irritating and disagreeable discharge.

Again, when it has been estimated that 50 per cent. of all pelvic disorders in the female are due to gonorrheal infection, and that in the great majority of these infections the cervix is affected, it impresses on us the necessity of combating this disease.

It is comparatively easy to eradicate the disease from the urethra, yet at times it is difficult without local attention strictly applied, but it is a very different affair when the cervix is diseased. The glands in the cervix are peculiar because of their deeper position and branched condition. They easily retain the cocci, which are ever a source of irritation and its resulting discharge. I have known in my practice such a discharge to have existed six years after a positive bacterial examination.

After many operations no credit is given for an operation most skillfully done for a most trying condition, because an irritating vaginal discharge from a diseased cervix continues after the patient is otherwise well and about, this discharge keeping the case fretting and nervous and baffling the ordinary douches to cure it. Neither the worry of the patient nor the inability to cure the case is a condition at which to wonder. It is annoying and distressing to a woman to have such a discharge, and it does keep her in an excited state. The inability to effect a cure is not to be marveled at because the ordinary douche nozzle is not the proper instrument to reach the glands of the cervix.

The physician paints the cervix with silver, and for a while all goes well, but sooner or later back comes the discharge, and he must go over his case again. At times he loses the care of the family, and another physician makes "history repeat itself."

These facts led me to investigate, and in a great majority of the cases of chronic vaginal discharge I was enabled to discover the gonococci, and to find that its habitat was in the cervical glands, in most instances being limited to them.

It then appeared to me that the only procedure was to destroy the glands, because to destroy the cocci without the destruction of the glands was highly improbable. Therefore, I injected drugs into the cervix. Silver and its preparation, pyroligneous acid, iodin, creosote, carbolic acid, lactic acid were tried, and now I am of the opinion that lactic acid is so far superior to any yet used.

Some agents cause too much of a slough, some only close the ducts, etc., but lactic acid, while causing a small slough, has never caused any ill result in any case yet, and has always responded to my expectations so far. In total, I have used it in 34 cases. Every case has shown the gonococci present before treatment.

The method is: First to cleanse the vagina and cervix thoroughly with warm water and cotton soaked in a water solution (4 ounces to 6 ounces) of pyroligneous acid. Expose the cervix by drawing it downward and into view by an ordinary long tenaculum. Then take an ordinary hypodermic syringe loaded with pure lactic acid, and inject just beneath the membrane a few drops of the acid. Continue this until the whole of the cervix is exposed as the superior and inferior lip is injected. It may be done in one sitting, or in a nervous case, if desired, in two or three sittings.

The accompanying table shows cases, both acute and chronic, which were so treated, and the results. Gonococci were found in every case.

I have since had an acute case in a patient aged 66 years, the oldest patient with acute gonorrhea I have ever treated.

The tabulated cases were treated at the Garretson Hospital, Charity Hospital, and in my private work. I wish to thank the resident physicians in the Garretson Hospital, Dr. Lopez in the Charity Hospital, and the other members of the staff of the hospitals for their courtesies in making bacterial examinations, in sending me cases, and in many other ways assisting me in the work.

TABLE OF CASES OF CERVICAL GONORRHEA CURED BY LACTIC ACID.

Case.	Age.	Discharge. Color.	Discharge. Amount.	Irritating.	Examined.	Stage.	Began to Treat.	Treatments.	†Mos. after
1	40	Greenish	Profuse	Yes	Sept. 6, 1904	Acute	Sept. 8, '04	2	8
2	30	Greenish	Profuse	Yes	Sept. 6, 1904	Acute	Sept. 8, '04	2	8
3	22	Greenish	Profuse	Yes	Sept. 10, 1904	Acute	Sept. 10, '04	2	8
4	25	Greenish	Profuse	Yes	Sept. 11, 1904	Acute	Sept. 11, '04	2	8
5	18	Greenish	Profuse	Yes	Sept. 11, 1904	Acute	Sept. 11, '04	2	8
6	19	Greenish	Profuse	Yes	Sept. 11, 1904	Acute	Sept. 11, '04	2	8
7	27	Greenish	Profuse	Yes	Sept. 11, 1904	Acute	Sept. 11, '04	2	8
8	31	Yellow	Fair	No	Sept. 18, 1904	20 days	Sept. 18, '04	1	8
9	30	Yellow	Profuse	Yes	Sept. 18, 1904	22 days	Sept. 18, '04	2	8
10*	16	Greenish yellow	Profuse	Yes	Sept. 24, 1904	22 days	Sept. 28, '04	3	8
11	50	Greenish yellow	Small	Yes	Oct. 4, 1904	30 days	Oct. 4, '04	2	6
12	41	Yellow	Fair	No	Dec. 1, 1904	24 days	Dec. 1, '04	2	5
13	29	Greenish	Profuse	Yes	Dec. 1, 1904	Acute	Dec. 1, '04	2	5
14	23	Greenish	Small	Yes	Dec. 6, 1904	Acute	Dec. 6, '04	1	5
15	25	Greenish	Profuse	Yes	Dec. 10, 1904	Acute	Dec. 10, '04	3	5
16	33	Yellow	Profuse	No	Sept. 10, 1904	Chronic	Sept. 10, '04	1	8
17	30	Yellow	Profuse	No	Sept. 18, 1904	Chronic	Sept. 18, '04	2	8
18	28	Yellow	Profuse	Yes	Sept. 24, 1904	Chronic	Sept. 24, '04	2	8
19	35	Yellow	Profuse	No	Oct. 4, 1904	18 mos	Oct. 4, '04	2	6
20	27	Yellow	Small	No	Oct. 4, 1904	Chronic	Oct. 4, '04	1	6
21	24	Yellow	Small	No	Oct. 12, 1904	Chronic	Oct. 12, '04	1	6
22	25	Yellow	Small	No	Oct. 12, 1904	Chronic	Oct. 12, '04	2	6
23	40	Yellow	Profuse	No	Oct. 12, 1904	Chronic	Oct. 12, '04	2	6
24	55	Yellow	Profuse	Yes	Dec. 1, 1904	Chronic	Dec. 1, '04	2	5
25	44	Yellow	Profuse	Yes	Dec. 6, 1904	Chronic	Dec. 6, '04	2	5
26	39	Yellow	Profuse	Yes	Dec. 6, 1904	Chronic	Dec. 6, '04	2	5
27	38	Yellow	Fair	Yes	Dec. 10, 1904	2 years	Dec. 10, '04	3	5
28	30	Yellow	Fair	No	Dec. 10, 1904	Chronic	Dec. 10, '04	2	5
29	40	Yellow	Profuse	No	Dec. 12, 1904	4 years	Dec. 12, '04	1	5
30	28	Yellow	Profuse	Yes	Dec. 12, 1904	Chronic	Dec. 12, '04	1	5

*Pregnant.

†Each case was examined in 3 weeks and found cured; this column shows date of re-examination, at which time no further evidences of the disease were found.

Acute are so classed if not over 12 days. Chronic are so classed if over 40 days. Between these days or years are given only cases where gonococci were found and reported.

CONCLUSIONS.

The conclusions so far reached are as follows:

Lactic acid injection does cure cervical gonorrheal infection.

Lactic acid injection has no ill after effects.

Lactic acid injection stops the spreading to the endometrium of the body of the uterus in acute cases if treatment is started soon enough.

Ordinary douches and painting of cervix can give only temporary relief.

It is better to destroy the cervical glands, and this should be done as soon as diagnosis is positive.

An examination should be made, not only of the discharge, but if necessary (where that examination is negative) of the cervical membrane, with its glands.

Most of the chronic discharges are due to retained gonococci.

It is possible to cure this discharge by injection by this method into the cervical glands.

Cervical infection is always possible in gonorrhea in the female, but by prompt action, tubes, etc., may be spared future disease.

So far lactic acid used by this method is the best drug for injection.

A too deep injection of the lactic acid may cause a slough, which, while not dangerous, is to say the least annoying, and lessens the good result which should be obtained from said injection.

2010 Chestnut St.

A CASE OF CEPHALIC TETANUS, WITH PARALYSIS OF BOTH SEVENTH NERVES.

JAMES HENDRIE LLOYD, A.M., M.D.
Neurologist to the Philadelphia Hospital
PHILADELPHIA.

In 1870, Rose[1] described a rare form of tetanus in which the tetanic symptoms were sometimes (but not always) confined to the muscles of the jaw and throat and were associated with a paralysis of the seventh nerve. This paralysis of the seventh nerve may be said to be the most distinguishing symptom of this form of lockjaw, and the cases thus far reported have, without exception, arisen from wounds in the territory of the fifth nerve.

Although paralysis of the seventh nerve is the most characteristic symptom, this nerve is not the only one paralyzed in all cases, for in very few instances the motor nerves of the eye, the hypoglossal nerve, and the branches of the pneumogastric nerve supplying the muscles of the pharynx, have also been involved. Such an anomaly as these local palsies present in cases of lockjaw could not fail in time to attract attention, and the disease has been variously named cephalic tetanus, *kopftetanus*, and *tetanus hydrophobicus*, the last name having been used by Rose because of a fancied, but quite superficial, resemblance to rabies.

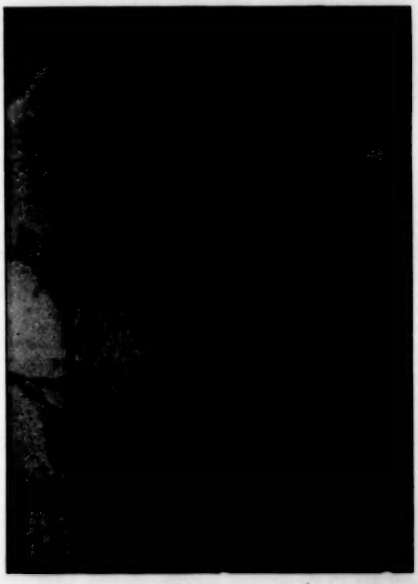
It was not until 1887, however, that the disease was first described in France by Terrillon,[2] and in America it seems even yet to be rare, for comparatively few reports of cases are on record. The best American paper is by Willard,[3] of Philadelphia, who, in 1895, published the report of a case in a boy and collected references in the whole literature to seventy-four cases, his own being the seventy-fifth. There are few other cases which have appeared since Willard published his paper or which escaped his observation.

In the vast majority of all reported cases the paralysis of the facial nerve has been unilateral, and this paralysis has been almost, if not quite, always on the side of the wound. A very few cases, however, of double facial palsy have been noted—so few, indeed, that I have found but six, possibly seven, examples. In these few cases, the wound, with but one exception, had been in the median line, usually on the nose, or on the bridge of the nose, or on the forehead. The case which is reported in the present paper is an instance of this double facial palsy, or facial diplegia, occurring in cephalic tetanus; and, as it is possibly only the seventh, or at most eighth, case of the kind to be observed with care, it has been deemed worthy of a special report.

Patient.—Mrs. K. O., aged 41, white.

History.—The patient first came to the Methodist Episcopal Hospital on Sunday, May 28, giving a history of having fallen downstairs eighteen days previously and having sustained an open wound on the bridge of the nose. The nose was swollen for a day or so, and the wound was covered with a small piece of court plaster. The patient felt no disability from the injury, except the discomfort from the wound, until fourteen days later, when she noticed her face beginning to draw toward the right side. She gradually became unable to move her lips, or to separate her jaws, and dysphagia soon developed.

Examination.—On examination by the resident physician, the following conditions were noted: The face was smooth and "ironed out;" the patient was unable to close her eyes, to wrinkle her forehead, to move her lips, to open her jaws or to swallow without difficulty. If the lips were held open by her fingers, she could articulate imperfectly; otherwise she answered in grunts. Sensation over the distribution of the fifth nerve was normal. The patient returned on the following Tuesday, when Dr. Holmes, under nitrous-oxid gas, found a spasm of the muscles of mastication, but no surgical condition present. The patient's friends said that she was able to close her eyes, to open her mouth, and to swallow until two weeks after the injury.



This shows the patient in the attempt to close the eyes. It also shows the trismus and the slight wound on the median line of the nose from which the infection occurred. The smooth expressionless appearance of the face and brow is also shown.

When the patient was examined by Dr. Lloyd, on June 2, the conditions were noted as follows:

The head is freely movable in all directions; no retraction of the head; no paralysis in any limb. A wound on the bridge of the nose is covered with a scab. The patient does not talk clearly, but answers mainly in grunts. She claims

1. Handbuch der Chir., von Pitha and Billroth, vol. 1, Ab. 11, No. 11, p. 5.
2. Rev. de Chir., 1888, No. 1.
3. Trans. Col. of Phys. of Phila., 1895, p. 27. Willard refers to a previous case reported by Hunt. (Trans. Col. Phys., Phila., 1862, May 7, vol. 111, N. S. p. 466), but Hunt's case was not one of cephalic tetanus. It was a case of punctured wound of the cranium, with injury to the brain, causing hemiplegia. The patient died of general tetanus, not kopftetanus with facial palsy.

that she is able to swallow, but complains of the accumulation of saliva and phlegm in the throat. She swallows water at request when it is given slowly through a space left by an extracted tooth, the patient lying on her back during the process. The larynx does not seem to rise as fully as in the normal act of swallowing.

Third, Fourth and Sixth Nerves: There is no involvement of any one of these nerves. Both the exterior and interior muscles of the eye act normally. The balls move freely in all directions. The pupils react normally to light and on accommodation and convergence.

Fifth Nerves: There is no anesthesia in the distribution of the fifth nerves. In the effort of chewing there is very slight movement of the masseters and temporals, but not enough to move the jaw, which is firmly set; and these muscles are felt to be rigidly contracted.

Seventh Nerves: There is slight ability to raise the right corner of the mouth. There is no sardonic grin, no tetanic rigidity of the facial muscles. In the act of trying to close the eyes, the balls roll far upward, but the orbicular muscles do not move, and the lids do not cover the whites of the eyes. There is no wrinkling of the brow. When laughing, there is no expression of the features indicating that act. The patient is unable to whistle, to puff out the cheeks, or to show the teeth. All the muscles of both sides of the face are paralyzed, except for the slight movement in the right corner of the mouth. The paralysis of both facial nerves is thus seen to be classical. The upper and lower fibers are alike involved. Both orbicular muscles are paralyzed; the patient can not close her eyes, and when she attempts to do so the eyeballs roll far upward until the corneæ are concealed beneath the upper lids. The brow and face are smooth and motionless, and the lips are powerless. The mask-like, expressionless appearance of the face is striking.

Twelfth Nerves: The patient claims that she can move her tongue; but this act can not be seen, because of the spasm of the jaw.

The trismus is extreme. The jaws are firmly set, and the patient can not separate the teeth to the slightest extent. In making an effort to talk she uses her fingers to separate the lips, which are flaccid and powerless. There is no tetanic involvement of the muscles of the neck, trunk, or limbs. No retraction of the head nor opisthotonus is present, or has been present.

The patient has no paralysis of the extremities. She is able to use her hands and arms perfectly, and walks with a natural gait; in fact, she walked into the hospital. The general condition is good; pulse and temperature are normal.

Course of the Disease.—The patient declined to remain in the hospital, and returned to her home, where she was treated by her family physician, Dr. William Irwin, to whose kindness I am indebted for the opportunity of continuing to see the case until the end.

June 7, the patient is slightly better. The eyes shut a little better, otherwise the symptoms are about the same. When she tries to talk, which she does very imperfectly, she holds the paralyzed lips apart with her fingers in order to enunciate more clearly (a characteristic action which has been noted in several of the reported cases). She is much annoyed by the accumulation of saliva, which tends to escape from between the paralyzed lips. The trismus is still complete; the lower jaw is clamped rigidly to the upper and is motionless. The patient is fed with fluids through a space left by an extracted tooth. There is to-day no true dysphagia or suffocation on swallowing, although from the statement of her attendants there has been something of the kind at times. There is no extension of the tetanic spasms to the neck, trunk or limbs. There is no paralysis of the limbs; the knee jerks are slightly increased, also the biceps jerks. There is no Babinski, or Oppenheim, or McCarthy reflex. The attempt to laugh produces a curious result; there is an odd sound, as of a chuckle, in the throat, but the face remains motionless. The general condition is fairly good; pulse 100; temperature normal.

June 16, examination with Dr. Irwin. The patient is better. She has regained some power in the face, more on the right side, and is able to draw the corner of the mouth farther over to that side. She is still unable to shut her eyes, to wrinkle her brow, to whistle, or to laugh. There is some relaxation of the jaw, as is seen on attempts at chewing, and as is proved by the fact that the patient has bitten her tongue. This also proves that she is able to move her tongue. The lower jaw, nevertheless, is still very rigid. There are no ocular palsies, or fifth nerve palsies, sensory or motor. There is no spasm on deglutition, nor of the neck or trunk. Saliva still tends to dribble from between the lips. General condition is good. The treatment by Dr. Irwin has been with chloral and the bromids. No antitetanus serum has been used at any time in the case. The prognosis seems very favorable to-day.

July 3, the patient has improved greatly, and has been out to walk. She can shut her eyes, wrinkle her forehead and whistle, but the lower fibers of the seventh nerves are still somewhat involved, more than the upper. The jaw is much relaxed, but still a little stiff. The eye muscles are normal. The expression of the face on laughing is still peculiar. The patient can be pronounced convalescent.

From this time the progress of the case was steadily onward to recovery. The whole duration of the tetanus was about six weeks.

CHIEF FACTS OF NOTE IN CEPHALIC TETANUS.

The following are some of the main facts to be noted in cases of cephalic tetanus:

The Seat of the Wound.—In the majority of cases of cephalic tetanus, the facial paralysis has been one-sided, and the wound, too, has been on one side, the paralysis being on the same side as the wound. Exceptions to this rule have been rare, and even open to doubt. A wound on the right side of the face does not cause facial paralysis on the left side, or *vice versa*. In all the cases of facial diplegia, however, except that of Roberts', the wound has been in the median line of the face, nose or forehead, but not every wound in the median line has produced bilateral symptoms, as witness the cases of Nankevell[4] and Oliva,[5] in which the wound was on the bridge of the nose, but the facial paralysis was on the right side of the face only; the case of Wagner,[6] in which the wound was in the center of the forehead, and that of Nerlech,[7] in which the wound was at the root of the nose; but in both cases the paralysis was in the distribution of the left facial nerve. By far the greater number of observers place the paralysis on the same side as the injury. On whichever side it occurs, however, the wound in cephalic tetanus is in the area of distribution of the fifth nerve, the commonest point being in what some authors call the orbital-nasal-temporal angle. One case has been reported, that of Pollock, in which the wound was in the eyeball, and another in which it was in the mouth. In the few cases in which the muscles of the eye have been paralyzed, the wound has been on or near the lid, but not all cases of wound on or near the lid have caused ocular paralyses.

The Character of the Paralysis.—The paralysis of the seventh nerve has all the characteristics of a peripheral paralysis; hence, it is like a genuine Bell's palsy. Both the upper and lower fibers are involved. The brow, the orbicularis palpebrarum, the small muscles of the face and lips, all are involved. Consequently, the patient can not wrinkle the brow, close the eye, move the face or lips, whistle, or display the teeth; and in unilateral cases the characteristic deformity is present, as caused by the flattening of the nasal fold and the drawing of the face toward the sound side. For some unknown reason, however, the reactions of degeneration are not present.

4. Lancet, July 14, 1883.
5. Gaz. de Chir., 1886.
6. Schmidt's Jahrbuch, 1884, p. 139.
7. Inaug. Dissert., Halle, 1892.

The Tetanic Symptoms.—Trismus is always a marked symptom, and in some cases it is the chief or even the only tetanic symptom. In not a few cases however, the tetanus extends to other muscles, as of the throat, neck, trunk, and limbs, the case thus presenting the picture of a more or less general tetanus. As a rule, however, the symptoms of cephalic tetanus are not so widespread or severe as in the ordinary type—a fact which bears on the prognosis.

Paralysis of Other than the Facial Muscles.—In a very few reported cases, the muscles of the eyes have been paralyzed. Thus, in Roberts' case, the left eyeball was completely immobile, while in the right orbit only the third and fourth nerves were paralyzed, the sixth escaping. The wound was under the left eye. In one case,[8] ptosis was observed. Willard makes no reference to these complications, so they are probably rare. v. Schrötter[9] reports a case of *kopftetanus* in which there was paralysis of the facial, the ocular, and the hypoglossal nerves. Neumann[10] claims that the facial nerve is paralyzed first; then the oculomotor, abducens, trochlear and hypoglossal are affected in the order named; but the number of reported cases is too small to admit of such a dogmatic rule. In most cases, the paralysis of the facial nerve has appeared at about the same time as the lockjaw.

PROGNOSIS.

Cephalic tetanus is not quite so severe a disease as the ordinary type of tetanus. More patients recover than in the usual form of lockjaw. Nevertheless, it is a very grave affection, with a high death rate, as the reported cases prove. From Willard's table we learn that of 45 "acute" cases (counting those as acute in which the lockjaw supervened within the first week after the wound) 39 patients died and only 4 recovered, a mortality of 90 per cent. Of 32 "chronic" cases (after the first week), 8 patients died and 24 recovered, a mortality of 25 per cent. This difference is striking and shows very conclusively that the important factor in prognosis is the date of onset of the tetanus after the reception of the wound. Gowers has claimed that the age of the patient is the determining factor; that all cases in patients over 25 years of age are fatal; but Willard's table disproves this claim effectually, for 15 of the patients who recovered were over 25 years of age. In the case reported in this paper, the patient was 41 years old and made a good recovery, but she comes within the "chronic" group, for the lockjaw did not appear until the fourteenth day. Willard's table also proves that in the "local" cases, i. e., those in which the tetanic symptoms are confined to the jaw, throat and neck, the prognosis is better, for 14 patients recovered and 15 died; while of the "general" cases, in which the tetanus is widespread, 14 patients recovered and 32 died. This is in accord with what might be expected. In the present case, the tetanus was strictly limited to the jaw, and the patient recovered, her condition never presenting such a grave appearance as is seen in generalized tetanus. On the other hand, the majority of the cases of facial diplegia have been fatal; in the 7 cases noted, only 2 patients recovered, one of them being my case; but these fatal cases also have all been in the "acute" group.

REVIEW OF THE CASES IN THE LITERATURE.

The following are brief statements of the cases of facial diplegia in cephalic tetanus that have been collected:

Thenée's Case.[11]—The wound was on the root of the nose, hence probably in the median line. It is reported as a case of "one-sided trismus," but there was also paralysis of the left side of the face, followed by paralysis of the right side. It proved fatal on the ninth day after the wound.

Roberts' Case.[12]—The wound was under the left eye, with early onset of tetanus and general convulsions. The left facial nerve was paralyzed completely, also the upper distribution of the right facial nerve. The left eye was completely immobile, while on the right side the third and fourth nerves were paralyzed, the sixth escaping. The case was fatal.

Huntingdon's Case.[13]—The wound was a little above the root of the nose—hence, probably in the median line. There was complete bilateral facial paralysis, but no orbital paralyses. Dysphagia was present, with profuse salivation. Trismus and cramps in the legs and trunk muscles occurred. Recovery took place in six weeks.

Bourgeois' Case.[14]—This patient was a gardener. The wound was in the median line on the nose. Both seventh nerves were totally paralyzed. Convulsions were general; the patient had dysphagia and spoke with difficulty, using his fingers to open his lips. The onset of the tetanus was on the sixth day, and death occurred on the third day after the first appearance of the lockjaw.

Crouzon's Case.[15]—The wound was in the median line at the root of the nose, and both seventh nerves were paralyzed. The patient used his fingers to separate the paralyzed lips in speaking. The case terminated fatally on the thirteenth day from the reception of the wound, the convulsions having become general.

Bouchaud's Case.[16]—The patient was a gardener. The wound was on the nose in the median line. The patient could not swallow liquids and spoke with great difficulty. Both seventh nerves were totally paralyzed, the paralysis being of the peripheral type. There was possibly some weakening also of both superior recti muscles of the eyes. Slight power remained in the lips. (Does this indicate that the lips are partially innervated by the twelfth nerves?) The patient, as in other cases, used his fingers to separate the lips in attempting to speak. Attempts at swallowing brought on suffocation. There were no tetanic spasms in the neck, trunk or limbs. An interesting feature was the fact that the patient was an epileptic, and had one epileptic seizure during his illness; but unfortunately it was not noted whether the paralyzed facial muscles were convulsed during this fit. The tetanus appeared on the sixth day after the wound, and death occurred six days later.

Caretti's Case.—Bouchaud refers to a case of facial diplegia in cephalic tetanus, reported by Caretti, but I have not secured the report of this case.

COMMENTS.

There has been much speculation about the nature of the paralysis of the facial nerve in cephalic tetanus. It is a unique phenomenon, for tetanus does not cause paralysis in other parts of the body. As these cases

8. L'Union Med., 1886, No. 173.
9. Wein klin. Wochft., 1902, No. 2, p. 56.
10. Zeit. f. Heilkunde, 1902, p. 344.
11. Berl. klin. Woch., 1880, p. 531.
12. Lancet, July 11, 1891.
13. Lancet, Sept. 17, 1892.
14. Gaz. de Hôp., 1900, p. 418.
15. Rev. Neurol., 1900, p. 402.
16. Jour. de Neurol., 1905, ix, p. 40.

all occur from wounds in the area of distribution of the fifth nerve, the hypothesis of a reflex paralysis has been invoked, but it explains nothing. Tetanus is an infectious disease, caused by a microbe. This microbe gains entrance in these cases at a point where it can exert a direct action on the seventh nerves, and its effect is to paralyze one set of nerve fibers (the seventh) while it causes tetanic spasm in neighboring nerves (the motor branches of the fifth). It might well be called *tetanus paradoxus*. Some observers have claimed that the trismus also has a tendency to be unilateral, or at least more marked on the side of the wound.

Vaillard (quoted by Bourgeois) denied that the facial nerve is truly paralyzed in these cases; he seemed to think that it was in tetanic spasm. It has been suggested that the asymmetry of the face is not due to paralysis, but to excessive tetanic spasm in the muscles of the opposite side.[17] Such an explanation, however, falls completely to the ground in those cases in which both facial nerves are paralyzed. Moreover, it can not explain the typical inability to close the eye and to wrinkle the brow and all the other classical symptoms of Bell's palsy. It has also been suggested (by Bernhardt and by Guterbrock) that the paralyzed muscles are also contractured; but this does not appear to be so on close examination. The passive raising of the lips by the breath on expiration and the lifting of the flaccid lips by the fingers in attempts at speaking (a characteristic act) are clearly indicative of paralysis.

Some of the clinical observations here recorded have been confirmed by experimental work, especially with reference to the seat of the wound. Brunner[18] injected the tetanus toxin into guinea-pigs and obtained symptoms on the same side into which the toxin was injected; and if it was injected into the median line, the symptoms were bilateral.

The pathology of this facial paralysis in cephalic tetanus has not been satisfactorily determined, although a number of autopsies have been made. The results, however, are negative. The reactions of degeneration have not been obtained. This was so in Willard's case, in which I made the tests. In the case reported in this paper the opportunity to make an electrical study was not favorable.

There has been no attempt in this paper to go into an exhaustive review of the literature. Willard's paper, already quoted, gives a long list of references and it is easily accessible. The attempt has been made here, however, to collect all the cases in which the facial paralysis was bilateral. Willard, in a review of 75 cases of cephalic tetanus, found but 2 in which both seventh nerves were involved. With the assistance of Dr. C. D. Camp, I have studied about 25 additional cases of cephalic tetanus, found but 2 in which both not included in Willard's list, and have found a total of 7 cases of facial diplegia, as abstracted above, the present case being the eighth.

Important papers on the subject of cephalic tetanus are by Villar,[19] Bernhardt,[20] Dard,[21] and Sapincourt,[22] the last two of which have not been accessible to me.

17. Gosselin: Gaz. d. Höp., 1880, ix, p. 65.
18. Deut. Zeit. f. Chir., xxx, p. 574; also Beiträg f. klin. Chir., vol. 9, p. 200.
19. Gaz. de Höp., 1888, p. 1357.
20. Zeit. f. klin. Med., 1884, p. 410.
21. Thesis, 1896.
22. Rev. Med. de Normand, 1904, iv, 373.

ATAXIA OF CENTRAL ORIGIN APPEARING IN CHILDHOOD.*

ARTHUR WILLARD FAIRBANKS, M.D.
BOSTON.

This paper is a brief consideration of a form of central nervous disease previously described under the titles of hereditary ataxia, cerebellar ataxia, and not infrequently under the heading of Friedreich's disease. It varies, in certain particulars, however, as we shall see, from the usual conception of what should constitute the affection bearing Friedreich's name. In view of its relative rarity, the number of cases of this affection coming under the observation of any single observer is naturally small.

The clinical characteristics of this affection stated briefly are: Muscular inco-ordination commencing usually in childhood, and, as a rule, first affecting the muscles of the lower extremities, thence extending to the upper extremities, and to the muscles of the trunk, head, larynx, tongue and eyes; slowness of muscular response to volitional impulse; swaying, unsteady gait; slow, hesitating or deliberate speech, sometimes of nasal character and occasionally explosive; nystagmus; oscillation or tremor of head, body or extremities; and certain involuntary movements, which may or may not be of choreiform character, and which may occur independently or may be associated with volitional intended movement of some other part of the body; lateral curvature of the spine; deficient energy in carrying out voluntary movements; and, in an advanced period of the disease, paralysis, muscular spasm and contractures.

To this symptom-complex may be added, during the course of certain cases, various other symptoms not sufficiently invariable to be considered characteristic, but nevertheless to be regarded as inherent, although less common, phenomena. Among these may be mentioned vertigo, headache, optic atrophy and impairment of pupillary action and of the movements of the ocular muscles, apathy of facial expression, a tendency to involuntary and unprovoked laughter, loss of muscular tone, sensory disturbance, peculiar deformity of the feet, trophic changes in muscles, and very rarely interference in the action of the sphincters and trophic changes in the skin.

Certain other phenomena must be regarded in the light of complications, since they are clearly due to involvement of those parts of the central nervous structure, primary affection of which would produce a clinical picture totally different from the one we are considering.

Such is the occurrence of psychical phenomena, depreciation of intellectual power, or epileptiform attacks. In this symptom-complex will be recognized many of the symptoms that characterized the well-known cases described by Friedreich in 1861, and which have since been identified with his name. Since then many cases have been reported differing so widely from the type originally described that certain observers have been led to believe that they were dealing with an affection of different nature. Several of these cases were undoubtedly not instances of Friedreich's disease, and even in the light of our present knowledge of how manifold may be its symptom-complex, bore in their clinical characteristics no resemblance whatever to the affection. The

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

majority, although varying in certain features, are, for the most part, so strikingly similar that no doubt of their close relationship can be entertained. Neither Friedreich's cases nor any other of the early instances reported can be used as a standard either on the basis of their clinical or pathologic character. An adequate idea of the affection and its variations can only be obtained by a study of many cases at different stages of the process and by careful comparison of the clinical phenomena with the changes found in the central nervous structure where systematic pathologic examination has been made.

Not all the symptoms of the affection develop in its early stage. Several are late phenomena. Naturally, therefore, the number of typical symptoms presented by any given case depends, in great measure, on the duration of the affection. Then some of the later symptoms tend to mask or obscure the earlier phenomena and thus alter the clinical picture. Finally, much depends on the extent of the process in the central nervous structure. Obvious as these facts may seem, they have not been given due consideration by many observers. In this connection I venture to assert my belief that the condition of the tendon reflexes, so long a bone of contention between the adherents for and against the maintenance of Friedreich's original type, is solely a matter of the duration, location or extent of the central lesion; and that the presence or absence of the knee jerks is, in itself alone, of no differential diagnostic value in this affection, and only indicates to us whether the process has or has not involved certain definite portions of the nervous structure.

Several cases, all in the early stage, because seen in young children from 3 to 10 years of age, have come under my observation. Five concern children 4 and 5 years old, in all of whom the affection was noticed first when the child began to walk, by its failure to acquire the power of equilibration. The brevity of the time allowed unfortunately forbids the giving of these cases in detail.

In all of these five cases the gait was unsteady; in three extremely so, these children walking with feet wide spread, from time to time hesitating, halting in their forward progress to sway several seconds over their center of gravity, as if about to fall, then moving forward, often with several short, quick steps in their effort to maintain their balance, approaching their objective point in a more or less indirect course.

In three of the five, well-marked ataxia of both upper and lower extremities was present, and was in all much more marked in arms and hands than in legs. In two speech was affected, in one associated with distinct involuntary accessory movement of lower facial muscles; in two speech was not acquired; in the fifth it was not yet abnormal. None of the other symptoms have yet appeared.

These cases are mentioned together because of the early period at which they came under observation, but also because in no single instance were the knee jerks lost.

For the privilege of reporting these cases I am greatly indebted to Dr. Bullard and to Dr. Thomas, from whose clinic at the Children's Hospital the cases come.

To these I wish to add a child of 10 years, which I saw in Senator's clinic, in which the knee jerks were greatly increased, and, in addition to the above well-marked symptoms, choreiform movements of head and arms and nystagmus were present.

The six cases reported by Friedreich in 1861 presented many, though not all, of the features of our symptom-complex. Being the first cases to be clearly recognized as a clinical entity, apart from the ataxy of Duchenne, and so reported and carefully described, they attracted wide attention and were discussed everywhere. This universal interest, fostered by several later papers by Friedreich, and increased by subsequent reports of apparently analogous cases by other observers, soon led to the adoption of Friedreich's name as the synonym of the disease. Then appeared, on the part of certain writers, an attempt to construct a rigid standard, based on the symptoms of Friedreich's cases and of those reported soon after his article appeared, to which it was required that all cases should conform. For a brief period all went well. Soon, however, as the field of observation enlarged, there began to appear instances differing materially in features of their symptom-complex from the clinical picture considered by these observers as characteristic of Friedreich's disease.

Cases appeared, the apparent origin of which was not at puberty, but much earlier; others also appeared of later origin. In some the knee jerks were not absent, but present, and even increased. Impairment of vision, disturbance in action of the pupils and external ocular muscles and other evidence of cranial nerve involvement occurred, while the not very infrequent presence of disturbances of sense gave evidence of occasional participation on the part of the sensory sphere.

Among these instances and possessing nearly all of the phenomena of our symptom-complex in most pronounced degree are the cases reported by Everett Smith, Mensel, Nonne and Sanger Brown. These cases are of exceptional interest on account of the extreme degree the affection attained and the frequent occurrence of the more unusual symptoms, and especially bulbar phenomena. Smith's cases are of special interest to us, because of five children affected in a family of thirteen the affection began in four before the tenth year. Of the greatest importance, however, is the fact that we have, in certain cases of each series, the records of the pathologic changes at the basis of this symptom-complex.

Six autopsies are presented for our consideration. Nonne's case showed general smallness of the entire nervous system without signs of degeneration. This case as reported is an anomaly. If this was, as Nonne thinks, a congenital condition, it can not be explained why the symptoms did not become marked until well along in adult life, and then were markedly progressive up to time of death.

In all of the other cases extreme degeneration of the posterior columns of the cord was found, together with marked involvement of the direct cerebellar tract (if we assume, as seems to me probable, and as I think the plate of the cross-section of the cord indicates, that a part of the degenerated fibers, in the lateral columns of Smith's case, were fibers of this tract). The condition of Clark's column is also unfortunately not mentioned in this case. It is, however, specifically stated that cells of the gray matter were far less numerous than usual, especially in the posterior portion, and in some places only a scattered few were to be seen. This, taken into consideration with the fact that the cells and fibers of

this column of the gray matter of the cord have been affected in nearly every instance where a pathologic examination has been made, make it exceedingly probable that Clarke's column was involved.

If, therefore, we may include this case, we find this column also affected in every one of these five cases. In every case the posterior nerve roots were more or less degenerated. The central canal is usually blocked with cells and its epithelial lining lost. In addition to these well-defined lesions, slight changes were found in individual cases in the rest of the gray matter and in the anterior roots. In two instances the crossed, in one the direct, pyramidal tracts were involved in the degenerative change. In all but one of these cases there were found abnormal conditions of the medulla and cerebellum, consisting of a reduction in size as a whole, atrophy of medullary fibers belonging to the cerebello-spinal system, and in two instances fibers of the cerebello-cerebral tract in the brachia conjunctiva, and atrophic changes and reduction in size and number of the ganglion cells of the gray matter, including in Menzel's case some of the cranial nerve nuclei, the spinal accessory, hypoglossal, facial, and the motor nucleus of the fifth.

The finer changes are characterized by a loss of the medullary sheaths, a shrinking and granular degeneration of the ganglia cells, by a proliferation of the neuroglia and an increase in the glia cells. In other words, by a parenchymatous degeneration and an interstitial proliferation.

While it is not my intention, in this brief paper, to discuss the etiology of this affection, it is nevertheless of the greatest interest to note that that portion of the cord, at least, which is the seat of the greatest intensity of the process is that part which is formed last, and which is nearest in point of time, and perhaps in condition, to the embryonic state, namely, the columns of Goll, Clarke and Burdach. Of the elements composing their structure, the matrix, or neuroglia, remains the nearest to the embryonal state. The tendency of embryonic or immature tissue to proliferate, in response to trauma or other irritant, is well known. It may be that the primary step in this affection is a proliferation of the neuroglia, followed by a degeneration of the medullary fibers, which are, perhaps, through their immaturity or inherent lack of vitality, only too ready to degenerate.

The sclerosis of the direct cerebellar tract is, I think, to be regarded as purely secondary to the atrophy and disappearance of the cells of the column of Clarke, and that, whatever part the neuroglia may elsewhere play in the process, it is here increased only as a result of the loss of the medullary fibers.

Just why the pyramidal tracts should degenerate as they have in certain cases is much more difficult to answer. It seems possible to me that, in cases where there is extreme proliferation of the neuroglia in the region of the transverse fibers of the pons, the pyramidal tracts may be injured as they pass through these transverse bundles from the middle cerebellar peduncle. This does not explain, however, those instances where the pyramidal fibers in the cord alone are implicated, with no involvement above their decussation. Interesting, however, is the occurrence of ascending degeneration of these tracts in certain cases of gliosis and cavity formation in the cord. Here it is, also, of interest to note the singular proneness of Clarke's column to degenerate in these cases of syringomyelia, and the much greater frequency of involvement of the posterior columns in the gliosis and secondary degeneration in this affection.

Proliferation of glia tissue, in cases associated with structural defects, either congenital or acquired, in the cord, is, of course, well known. Of the greatest interest it seems to me, in this connection, is the fact that structural abnormalities of the cord have been found several times in Friedreich's disease; in fact, in one of the cases reported by himself two symmetrical canals were found in the lower dorsal region nearly corresponding to the columns of Clarke on each side; and in a case reported by Mackay, a picture of which I hope to show you later, marked structural anomaly was present. In our series, in Smith's case, an abnormal canal was present in the lumbar region. These defects lend strong support to the view that we have to do with, a process supervening on a developmental insufficiency, either in structure or inherent vitality, of the nervous system. This view is still further strengthened by the frequent strong family tendency to the disease, by the occasional history of its occurrence in other generations, and by the not infrequent presence in other members of the family, not affected by the disease, of marked anatomic, physiologic or psychical defects. Marie, in 1893, attempted to establish a differentiation of certain cases from Friedreich's disease on the basis of a difference in the clinical symptoms, laying especial stress on the age of onset and the condition of the knee jerks. A study of a large number of instances of the symptom-complex does not seem to support the contention.

The variations in the phenomena are seen to be merely a question of degree, the variations so merging into one another as to allow of no abrupt distinction. Neither do the results of pathologic examination permit of any sharp differentiation. Even in one of the first cases ever reported we find invasion of the lower portion of the medulla; in others the upper part as well; in still others implication of the pons and cerebellum. Moreover, some of the symptoms of Friedreich's disease are distinctly cerebellar in character, and, while I do not believe it essential that the cerebellum be affected for the production of these phenomena, they being also possible in disease of its connections with the rest of the nervous system, I believe it would be found affected much more frequently if microscopic examination of its structure was made.

Moreover, many of the phenomena of our symptom-complex have occurred in cerebellar atrophy, hemorrhage and other lesions, in the human being, and have been features of the phenomena following atrophy or experimental lesions of the cerebellum in animals. I regret that the time does not permit giving the details of these instances.

I may mention, however, among many other interesting instances, the results of the experiments of Luciani, in Italy, in which partial or complete extirpation of the cerebellum, in monkeys and dogs, was followed by muscular inco-ordination, loss of muscular energy, loss of muscular tone, tremor and oscillations of different parts of the body, curvature of the spine, forward inclination of the body, slowness of voluntary movements, nystagmus and muscular contractures; all of which symptoms are frequently met with in Friedreich's disease, and the most of which are almost invariably present.

DISCUSSION.

Dr. C. F. Wahrer, Fort Madison, Iowa, asked whether the choreic movements mentioned by Dr. Fairbanks included the movements of the so-called *tic convulsif*; also whether there were any athetoid movements and if diminished nutritive change was noticed in the nerve tracts.

Dr. H. E. Garrison, Dixon, Ill., asked if Dr. Fairbanks has ever noticed any consumptive tendency in connection with

these children. The only case Dr. Garrison has seen which resembled it was a 5-years-old child whom she was called to see. A consultation had been held and the child was to be operated on for tubercular peritonitis. Dr. Garrison found the child completely paralyzed except in the left hand. She objected to the operation, for she saw no signs of tubercular peritonitis, and asked the physician to examine for tubercular organisms in the sputum and a few bacillus were found. The child, three months afterward, visited Dr. Garrison and remained for three weeks. When she came she was able to creep around. By judicious manipulation the development of the atrophied muscles was aided and the child is now apparently in perfect health and has since been able to enter school.

DR. A. W. FAIRBANKS said that the movements noted were not those of *tic convulsif*. The athetoid movements did occur, but so rarely that he did not include them in his summary of the signs. He is inclined to think that they were not athetoid movements, but rather choreic movements of slow character, simulating athetoid movements. There was extreme atrophy and degeneration of the peripheral nerves. Dr. Fairbanks thinks that there is no ground for the assumption that tuberculosis is an etiologic or pathologic factor. Tubercular processes are sometimes terminal factors of the disease, but do not form an integral part. He should not consider that the case mentioned by Dr. Garrison belongs to this class of disease because of its marked improvement. Instances do occur in which the disease does not progress for a time, but sooner or later it progresses and the patient dies. He believes that the more these cases are studied the more it will be found that they originate in childhood. The very slowly progressive symptoms in the early stages are overlooked by the parents.

COLLODION AS A DRESSING AFTER INTRANASAL OPERATIONS.

A PREVENTIVE OF POST-OPERATIVE HEMORRHAGES.*

KASPAR PISCHEL, M.D.
SAN FRANCISCO.

Since the publication of my first paper on this subject,[1] some improvements have been made in my method of using collodion as a dressing after intranasal operations. These were partly evolved from my own experience and partly from the suggestions of my colleagues.

Dr. E. Rixford of San Francisco suggested the use of compound tincture of benzoin as a substitute for collodion. I found it very reliable as a preparation of the wound for collodion; it dries the tissue nicely, so that the collodion sticks to it much better.

Dr. James F. Smith of San Francisco uses pieces of gauze instead of wisps of cotton. I have followed his suggestion.

Dr. C. W. Richardson,[2] Washington, D. C., applies the collodion with a probe; I had tried that before I selected my present method, but discarded it.

That the usual after-treatment is not satisfactory to many was well expressed lately at two European congresses where this question was discussed.

I therefore take the liberty to describe my method. After intranasal operations, we must choose between packing the nose or risking a postoperative hemorrhage. A reliable, firm packing of the nostril causes great discomfort and often a sleepless night, while the collodion dressing allows the patient to breathe even through the nostril operated on, but covers the wound against infection from the air and prevents secondary hemorrhages.

I have now used this dressing in 343 cases with perfect results in 333 cases. I had to replace the collodion dressing after a few hours in 4 cases. In 3 of these the hemorrhage ocurred on the posterior end, in 1 case of polypoid degeneration of the erectile tissue in the anterior half. In 6 cases, or less than 3 per cent., the collodion dressing was not sufficient and had to be replaced by packing. The hemorrhages occurred in 5 cases from the posterior end of the lower turbinal. One of these five patients was a bleeder, with hypertrophy of the left ventricle, high blood pressure and traces of albumin in the urine, indicating the beginning of a shrinking kidney. The sixth case was a fibrous polypus from above the posterior end of the lower turbinal on a place on which I could not properly apply the collodion dressing.

I am aware that this method is far from perfect, but I hope that if some members of this Section take the matter up and try to improve on it they will perfect it to such a degree that there will be no more postoperative hemorrhages.

TECHNIC.

After I have finished the operation and stopped the bleeding with adrenalin, I clean the field carefully, wipe over the wound and surrounding tissue compound tincture of benzoin on a cotton carrier, then cover the wound with a piece of sterilized gauze (about 1 by 2 cm.). I am particularly careful to press this around the posterior end, as from that point hemorrhages occur most frequently. These pieces of gauze I keep on hand compressed, so that they are stiffer and can be more easily introduced. I drop the collodion slowly on this gauze, beginning on the posterior end, while my assistant blows hot or cold compressed air into the nostril to quicken evaporation. The collodion and gauze form a white, firm membrane, which fulfills two purposes: it protects the wound against infection from the air, and prevents secondary hemorrhage. As an extra precaution, I instruct the patient to keep a little cotton in the entrance of the nose on the way home. This absorbs the little oozing of blood and serum which exists even when the nose is packed. The cotton may be changed as often as it is soaked; but the patient may take it out at home so that he can breathe through that nostril. This dressing I leave in the nose from four to six days; if left longer the edges become loose and too much discharge is kept back.

In order to remove the dressing, I cocainise the nose and apply some peroxid of hydrogen, which helps to loosen the dressing, which I then take out with a pair of pincers; frequently a few drops of blood follow this procedure.

For dropping the collodion on the wound an ordinary eye dropper will not do. The collodion would flow too quickly. It must be dropped on the wound slowly and carefully, so that it does not run down into the pharynx, an accident which would make the patient gag and cough. One might use a fine Eustachian catheter, on the wider end of which a small rubber bulb is mounted, fastened airtight with a rubber band. One filling of the tube with collodion is usually enough to cover the whole wound. I use a small metal tube 9 cm long, 1 mm. thick, with a tulip tip on one end, to fasten the rubber bulb. This tube must be cleaned out thoroughly after use.

DISCUSSION.

DR. OTTO T. FREER, Chicago, regards dismissing patients after intranasal operations without tamponing as permissible after operations on the middle turbinated body, but a dan-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Arch. of Otol., vol. xxxi, No. 5, 1902.
2. The Laryngoscope, vol. xiv, No. 9, 1904.

gerous practice to follow after resections of the lower turbinate or operations on the septum. A false security is created by the long duration of the bloodlessness about the wound due to cocain and adrenalin, so that even a good-sized artery will not bleed. After some hours, however, relaxation of the vessel with dangerous bleeding is very apt to occur, and to last a long time before the surgeon can reach his patient. Dr. Pischel's method may be a good substitute for the tampon though Dr. Freer has had no experience with it, but to let the patient go without any precaution against delayed hemorrhage is a mistake. Dr. Freer said that he knows of a case in the practice of a colleague in which the patient bled to death in spite of packing, and of a hemorrhage in the practice of another physician in which the patient became almost exsanguinated before relief came. It is therefore not safe, he said, to send the patient home unpacked. The physician can not be sure that he will observe instructions and will not sneeze and blow the nose. Dr. Freer has seen a violent delayed hemorrhage follow the use of the galvano-cautery.

Dr. Hal Foster, Kansas City, Mo., said that if physicians err at all they would better err on the side of safety and use some packing in the nose. There may be many cases without hemorrhage, but they are likely to have an unpleasant experience at any time. He would feel safer with a packing in the nose.

Dr. Robert C. Myles, New York, said that the history of nasal operations resembles in some respects the work on the throat. Mackenzie did more operations without a death than probably any other man, and he had no hemorrhage. Dr. Myles has had several hemorrhages that were very distressing. He adopted the practice of putting nothing in the nose and got along very nicely until he would have a hemorrhage in the midst of a busy day, and then he would begin packing all of that class of cases. It is often advisable, he said, to remove large pultaceous masses of tissue from the anterior turbinate when these cause distress in sleeping and breathing or in the ear. The removal with snare, scissors or trephine, of the redundant tissue of the turbinate and the periosteum gives often permanent freedom, but hemorrhage frequently occurs. No doubt there are many evil consequences from packing and from the pressure. If patients could be controlled it would be better not to pack. Physicians pack in many cases in which, possibly, it is not needed, because of the danger of hemorrhage. When called to these cases of hemorrhage there is usually a great loss of blood before the physician arrives.

Dr. Kaspar Pischel, San Francisco, declared that just such experiences as Dr. Richards has described compelled him to use packing before 1901. In his own nose the packing was so disagreeable that he began to look for something else. He covers the whole wound with collodion. The same method is used after operations on the middle turbinate and on the septum.

LESSONS TO BE LEARNED FROM THE PRESENT OUTBREAK OF YELLOW FEVER IN LOUISIANA.*

JAMES CARROLL, M.D.
Assistant Surgeon, U. S. Army.
WASHINGTON, D. C.

The present seems to be a suitable occasion to invite attention to several points in connection with the epidemic occurrence of yellow fever in the United States at the present as well as at other times. In the discussion of the symposium on yellow fever at the meeting of the American Public Health Association in Washington in 1903, I called attention[1] to the necessity during the epidemic season for requiring physicians, in cities where yellow fever is prevailing or likely to prevail, to report promptly to the authorities all cases of fever of any kind coming to their notice. This is necessary in order that there may be no delay in the institution of proper measures to protect the community against extension of the disease if it be yellow fever, for this extension will almost surely take place in the more southern latitudes if the patients are not protected from mosquitoes at the outset. If all cases of undetermined fever were promptly reported and at once protected from mosquitoes[2] it would hardly be possible for the disease to spread if it were yellow fever; on the other hand, where the physician waits for the appearance of black vomit, the golden opportunity passes by, for it has been shown that in practically all cases the disease can not be communicated after the fourth day of the fever. For this reason the diagnosis should be anticipated, and all febrile patients should be immediately protected from mosquitoes until it is shown by actual demonstration that they are not suffering from this disease. Epidemics do not follow every introduction of yellow fever; mosquitoes becoming infected may die before they bite a non-immune, or the patients may happen to be treated in a locality free from *Stegomyia*. A group of cases of yellow fever occurring without black vomit usually receives the designation bilious remittent fever, a diagnosis that should be erased from our text-books. Bilious remittent fever, acute in type and of short duration, appearing in the United States, is yellow fever, and it should be so regarded. Bilious remittent fever was formerly regarded as a type of malarial remittent, but that was before the use of the microscope was found to be necessary for a positive diagnosis of malarial infection. We know now that malarial fever is not a disease of cities, but of outlying districts, while the bilious remittent fever, so called, has been recorded in the cities, in epidemic form, and in such intimate association with yellow fever that by some, the diseases were declared identical, and by others the latter was said to be only a modification of the former. Most interesting and important in this connection is the statement cited by La Roche,[3] in his chapter on bilious remittent fever, that "the morbid appearances revealed on dissection are the same in remittent as in yellow fevers." This statement, however, was not wholly accepted by him, for he calls attention to the bronzed appearance of the liver in certain remittents, a condition that we know results only from malarial pigmentation. Now that we can so easily differentiate malarial remittent and typhoid from yellow fever, the diagnosis is much less difficult, except where yellow fever occurs as a complicating infection.

Our confrères in Havana have demonstrated to us that it is possible to prevent the epidemic occurrence of yellow fever, while occasionally admitting cases of the disease into the heart of a city in which the climatic and other conditions are known to be most favorable for its extension in epidemic form, and in which there are more susceptible persons now than ever before. The method suggested here is in many respects similar to, and is based on, the one adopted during the American occupation of Havana.

Since then it has been sufficiently demonstrated, in 1903 and again in 1905, that under the lax system heretofore and now in vogue, yellow fever can easily secure a firm foothold in certain of the southern states and escape recognition until it has passed almost completely

---

* Read at the Thirty-first annual meeting of the American Public Health Association at Boston, September 25-29, 1905.

1. Report of the Proceedings of the American Public Health Association, vol. xxix, p. 291.

2. Since this paper was read, I have been informed by Dr. E. Liceaga, president of the Superior Board of Health of Mexico, that the line of procedure indicated is now being followed in his country.

3. Yellow Fever, La Roche, Philadelphia, 1855, vol. i, p. 560.

beyond control. On both occasions cited, the outbreak was suppressed or limited only by the intervention of the general government, which, through the energetic action of the U. S. Public Health and Marine-Hospital Service, finally succeeded in checking two epidemics that threatened to become little less than national calamities. Great credit is due to those officials for the success that was attained in spite of the extreme delicacy of the situation and the passive opposition encountered from many quarters.

Our experiences in Cuba have shown that for the exclusion and suppression of yellow fever absolute hygienic control is necessary, not only of the people at large, but of the patients as well, and especially of the practicing physicians. The aim of modern medicine is the prevention of disease rather than its cure, and the safety and welfare of the thousands of persons exposed demand that the proper measures be instituted and rigidly enforced. No valid argument can be brought forward to show why the United States should not be kept as free from outbreaks of yellow fever as the city of Havana, its former endemic home has been, during the past four years.

To attain this result the following requirements seem to be essential:

1. Our physicians, or at least those who are in control, must disabuse their minds of the impression that black vomit necessarily occurs in the majority of cases of yellow fever.

2. During the epidemic season, viz., from about May 1 to October 31, and in the epidemic zone, physicians should be required to report to the health authorities, immediately, all cases of fever of any kind that come under their observation, whether among their patients or not, and failure to do so should be made punishable under the law.

3. The board of health should be authorized to appoint, with proper compensation, a commission of three experts, all of whom should be men of high reputation as diagnosticians. It should be the duty of this commission to visit without delay all cases of fever reported to the health authorities, and the onus of diagnosis should rest on the commission and not on the attending physicians. They (the commission) should visit each patient daily until the diagnosis is established or the patient sent to hospital, and they should forward promptly to the health department a written report at each visit. The commission should determine whether or not the patient shall be treated as a possible case of yellow fever, and their decision should be final and obligatory on all concerned.

4. All patients presenting the symptoms of yellow fever, and all cases not diagnosed but remaining under suspicion, should be promptly removed for treatment to a hospital especially located and provided with wire screens and mosquito nets, and the whole or a portion of which has been set apart for that purpose. The yellow fever wards or hospital should be under the direct control of the senior diagnosis commission, and the patients should be treated by physicians appointed only on their recommendation and acting under their direction.

5. In exceptional cases, to be determined by the commission, patients under observation awaiting diagnosis could be treated in their homes beneath mosquito netting, and in rooms properly protected with wire screens, until the nature of the case had been finally settled to the satisfaction of the commission.

The commission and not the attending physician should be held responsible for the enforcement of all clinical measures necessary for the protection of the community, and they should be empowered to employ such help as seemed in their judgment to be required. They should also be assisted at times by subcommissions appointed on their recommendation.

Under such a system, conscientiously carried out, the occurrence of an epidemic of yellow fever in any city would become an impossibility. Objection can not be made on the ground of expense if the members of the diagnosis commission are paid only for every visit to a patient; under such an arrangement the cost to the city would be trifling when compared with the losses now sustained by individuals and the whole community through the failure of practicing physicians to recognize and report mild cases of the disease. And herein lies the crucial point. The diagnosis must be anticipated and the proper precautionary measures be taken before the disease has fully declared itself. Diagnoses of malarial remittent, and above all of bilious remittent fever, must not be accepted as conclusive until the presence of malarial or other parasites has been demonstrated to the satisfaction of the members of the diagnosis commission. Attention was called two years ago[4] to the fact that over and over again, since the time of Benjamin Rush, yellow fever has stalked abroad in our cities, unrecognized, under the guise of bilious remittent fever. The time has come when a diagnosis of bilious remittent fever should no longer be accepted, for there is no such disease *per se*. We may have malarial fever complicated with jaundice, but this should not change the diagnosis of malaria any more than an accompanying icterus would change a diagnosis of typhoid fever. Similarly a complication of malaria no longer justifies the diagnosis of typho-malarial fever, and that term has properly been discarded. In numerous instances it is stated in the records of the older epidemics of yellow fever that the disease was preceded by, or began as, a bilious remittent fever, just as in more recent times physicians have believed that typhoid fever began as malarial fever. The conclusion is equally untenable in both cases, and the deduction is obvious that cases of so-called bilious remittent fever must be regarded and treated as cases of yellow fever, unless a satisfactory specific cause for the condition can be demonstrated beyond a doubt. It is proper to mention here that in every one of the twenty-two cases of yellow fever purposely inoculated by the Army Board in Cuba, a diagnosis of bilious remittent fever would have been justified if it had not been known that they were produced from true cases of yellow fever, for, although some of them were severe, black vomit was absent from all.

It may seem unnecessarily severe to require physicians under a penalty, to report all cases of fever coming under their observation, but no other means will attain the desired result, and the enormous interests at stake demand that the methods instituted be thorough and that they be rigidly carried out. The appointment of a board of diagnosis, as has been suggested, will relieve the attending physician from the odium that accompanies a diagnosis of yellow fever in a doubtful case, and the board, fully appreciating the responsibility that rests on them, may be relied on to do their duty. During the discussion on yellow fever before the American Public Health Association at its meeting in Washington two years ago, already referred to in my remarks, which were badly

4. Journal Association of Military Surgeons, 1903 (No. 4), vol. xiii, pp. 193, 199 and 200.

misquoted.[5] I urged the necessity for requiring physicians, under a penalty, to report all cases of fever in order that they might be examined by a board of experts (as was done in Cuba), and treated as cases of yellow fever until the diagnosis was established. Only last month, in a conversation on this subject with a physician from a large city in Texas, he laughingly remarked, "We never report our cases of yellow fever until we have about a dozen of them!"

The present epidemic in and about New Orleans only serves to emphasize the necessity for such regulations as are here suggested, and this necessity is further emphasized by the statement in the public press of September 5 that "Inspector Brady attributed the continued spread of the disease to the unwillingness or inability of physicians to diagnose mild cases of yellow fever, and that physicians of standing and ability look for black vomit before making a diagnosis." We have elsewhere[6] cited the occurrence of the same difficulty at Key West in 1889, and we again assert that these physicians may be thoroughly conscientious and able men, but they are baffled by the differences between the aspects of the disease as they actually find it and as they have been taught by the best authorities to expect to find it. It is the manifest duty of local health authorities, therefore, to relieve the physician of the burden of diagnosis and to leave that and the adoption of protective measures to the board of expert diagnosticians.

In this connection I beg to be permitted to call attention to the present situation at Jackson Barracks, a station of two batteries of coast artillery, in New Orleans. By the seventh day of the present month a number of cases of yellow fever had appeared in the neighborhood and seven of them in a block that approached within one hundred feet of the officers' quarters. Still the garrison has not been removed and up to the present time no single case has occurred among them; even should a case or two appear an epidemic is not feared. The reason for this is simply that the medical officers know that it is absolutely within their power to prevent any epidemic extension of the disease; they are constantly on the alert, and all cases of fever are handled in the beginning as though they might be yellow fever.

Again, at Fort McIntosh, in Laredo, Texas, in 1903, there were only five cases of yellow fever in a command of 111 officers and men, while in the town alongside them over 1,000 cases and more than 100 deaths occurred. It was found that the five men who became infected had violated orders by visiting the town at night without wearing the prescribed mosquito head-nets, leather gauntlets and leggings.

If, in the presence of cases of yellow fever among and around them, garrisons of soldiers can be protected from the infection in anything like epidemic form, it necessarily follows that the same measures and the same degree of vigilance will protect a community, provided the physicians do their full duty and they are properly assisted by the authorities. The subject is one involving the lives and interests of thousands of innocent persons, and the secret of success lies in eternal vigilance with the determination to allow no case, however mild and doubtful, to escape the fullest precautions.

5. Reports of the Proceedings of American Public Health Association, vol. xxix, 1904, p. 291.

6. Journal Association of Military Surgeons, 1903, vol. xiii, No. 4, p. 201.

The Better Surgeon.—Better is the surgeon who saves a finger than he who amputates a leg.—*Proverbs Up to Date.*

TEST TYPES ACCORDING TO THE GEOMETRICAL PROGRESSION OF DR. JOHN GREEN.*

CHARLES H. WILLIAMS, M.D.
BOSTON.

In 1868, Dr. John Green, of St. Louis, wrote as follows:

The letter proeven of Snellen are deservedly the acknowledged standard for determining the acuteness of vision. They are, however, somewhat imperfect both in plan and in the execution of the smaller letters. The defects in plan consist in the selection of letters which are not so uniform in size and character as is to be desired and still more in the fact that the gradations of size in the successive numbers of the series are not uniform. I have now to propose a new series—bearing the constant ratio of .795 and combining the advantage of regular geometric progression with the preservation of all the important numbers of Snellen.

A series of such numbers in Gothic form was published in the transactions of the American Ophthalmological Society for 1868.

Again, at the meeting of the Fourth International Ophthalmological Congress, held in London in 1872, Dr. Green read a paper on "Some Improvements in Test Letters," and presented a series of letters arranged according to the geometric progression, in which a constant ratio of $1 : \sqrt{.5}$ (1 : 0.7937) was adopted. He said:

This series includes all the most important numbers of Snellen and contains very few fractional quantities. After four years of constant use I now venture to recommend this ratio of gradation for general adoption.

So far as I know, these test-types were never placed on the market for general sale. No public recognition was made of the soundness of this gradation until the paper by Dr. E. Javal, of Paris, which was read at the Section of Ophthalmology of the Thirteenth International Congress of Medicine at Paris in 1900. He acknowledged the work of Green in 1868, but recommended a geometric progression on the ratio of 1:1.41, that is the $\sqrt{2}$. He concluded his paper with this sentence:

En effet je ne doute pas qu'avec le temps, les échelles a progression géométrique proposées par Green dès 1868, ne soient universellement adoptées.

The standard of normal acuteness of vision proposed by Snellen more than forty years ago, and which has been so universally adopted, namely, the ability to recognize isolated capital letters whose height subtends a visual angle of five minutes, and the width of whose component lines subtends an angle of one minute, ought to be retained, but we must remember that when Snellen made his experiments to determine the smallest visual angle at which letters could be recognized by normal eyes, he included in this class all eyes having an error of refraction of less than one diopter. The result is, for normal eyes free from errors of refraction, the visual angle of five minutes is somewhat too large, since these eyes can see letters which subtend a smaller angle than five minutes, and in arranging a new series of test-types at least one line of letters should be provided which subtends less than the five-minute angle. If we start with an accepted testing distance of five meters, it will be best to have the letters of the smallest line of test-types of such a size that at a distance of four meters they will subtend the standard visual angle of five min-

*Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

utes, and if these letters can be read at the five-meter distance they will represent a vision of 5/4 (or 1.25) of the Snellen normal. Taking four meters for our smallest line of test types, equal to V.=5/4 (or 1.25), and fifty meters for the largest line, equal to V. = 5/50 (or 0.1), as representing the extreme range that it is desirable to cover in such a series of test-types, let us construct a series of figures for the intermediate lines according to the proposed ratios of Green and of Javal, and compare them with each other and with the Snellen series.

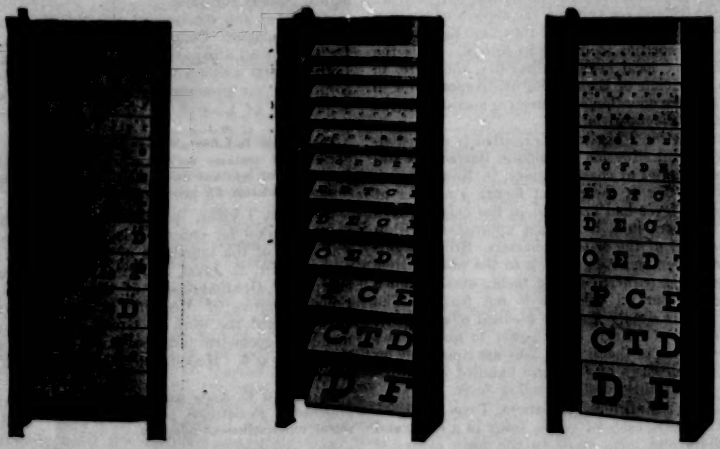
Beginning with 4 (4 meters) and applying the Green ratio for an ascending series of $1:\sqrt{2}$, or 1 : 1.2599 (approximately 1.26), we get the following:

Let 4 = the number for the first line, and x = the number for the next line.
4 : x = 1 : 1.26.
x = 5.04.
For the next line:
5 : x = 1 :1.26.
x = 6.30.
For the next:
6.3 : x = 1 :1.26.
x = 8.

In this series of Javal there are not enough lines to get the finer differences needed between the different lines of test-types, especially in the smaller sizes of letters, also there are too many fractions, but this last could be improved by constructing a series with the same ratio, 1.41, but beginning with 3.5 instead of with 4. In this case the approximate series would be 3.5, 5, 7, 10, 14, 20, 28, 39, 55.

Snellen's series is 5, 6, 10, 15, 20, 30, 50. It will be seen that the ratio of Green gives a greater number of lines where most needed and is better adapted to the needs of every-day use, where small differences in acuteness of vision are to be tested.

In the series of test letters here presented, the shape of the Snellen block letter has been retained, only those letters have been used which could be drawn in a square with equal height and width, the height of each letter is five times the width of its different parts, and the height of each letter subtends the Snellen visual angle of five minutes at the distances in meters shown at the



It will be found that, beginning with 4, the fourth figure in such a series will be just double the first, and, as this rule applies throughout the series, the numbers are easily found as follows: 4, 5, 6.3, 8, 10, 12.6, 16, 20, 25.2, 32, 40, 50.

Again, if we apply Green's ratio for a descending series of $1:\sqrt{.5} = 1 : 0.7937$ (approximately 0.8), we get:

50 for the first line:
40 : x = 1 : 0.8 = 40 for the second line.
40 : x = 1 : 0.8 = 32 for the third line.

The fourth line will be one-half of the first, and so on through the series, giving a descending series of 50, 40, 32, 25, 20, 16, 12.5, 10, 8, 6.2, 5, 4, which is practically the same as the first series. The exact figures for such a series, beginning with 4 and taking Green's ratio of 1:1.2599, are as follows: 4, 5.0396, 6.3494, 7.9996, 10.0787, 12.6982, 15.9985, 20.1565, 25.3952, 31.9954, 40.3110, 50.7878, but for practical purposes the approximate series already given is all that is needed, and the difference between the series, approximate and exact, is very small.

Javal's ratio of $1:\sqrt{2} = 1.41$ gives the following series: 4, 5.6, 7.9, 11.2, 15.8, 22.3, 31.4, 44.3, 62.5, left of each line in red numbers. The ratio is the geometrical ratio of Green: $1:\sqrt{2}$ (1:1.26) for the ascending series, and $1:\sqrt{0.5}$ (1:0.8) for the descending series. The letters have been drawn with great care, and the plates have been engraved so that the printed height of the letters will not vary more than 1/100 of an inch from the calculated sizes. On the right hand side of each line is another number in red, giving the acuteness of vision in decimal notation, which will be found convenient by those who have used the Monoyer scale. These decimal numbers are adapted to a testing distance of five meters.

By using the numbers on the left hand of each line the letters can be used at any desired distance, since the ratio between the lines is a constant one and the Snellen formula of V. = d/D applies for each distance. Thus, at a distance of five meters the person who reads the five-meter line will have V. = 5/5, or 5/10 if he reads the third line below it; so at a distance of 4 meters, if a person reads the top line he will have V. = 4/4, or 4/8 if he can only read the third line below it, and so on through the series. The numerator of the fraction being the greatest distance in meters at which the letters are

V 4
190

read, and the denominator being the distance in meters at which the letters subtend the visual angle of five minutes, according to the Snellen formula V. = d/D.

In the series of letters now presented the reversible feature is new. Each line of letters is printed in duplicate, with a different arrangement of letters on each, these lines are pasted on slats and the slats mounted in a suitable frame so that they all can be rotated by pulling a cord from across the room near the trial case of glasses; in this way the series of letters can be changed at will and a new series used for each eye. The plan of the reversible slats having been found somewhat expensive in its mechanism, a simpler arrangement has been contrived; the same series of lines are pasted on two sides of a long card, the card is then suspended from a simple support that can be rotated either way by a cord from across the room, so that each side of the card can be exposed to view at will.

The different distances in meters at which the letters subtend the visual angle of five minutes, and the heights of the letters on each line, in fractions of an inch are given in the following table as calculated by the formula X = 2 AB sin. ½a in which X is the desired height of the letter. AB is the distance of the letter from the eye, and a is the visual angle of five minutes.

Distance in meters at which height of letters subtends a visual angle of five minutes.	Height of letters in fractions of an inch.
50	2.88
40	2.29
32	1.83
28	1.44
20	1.14
16	.91
12	.73
10	.57
8	.45
6	.36
5	.29
4	.23

The reason for giving the heights of letters in fractions of an inch instead of in metrical numbers is that our engravers are not accustomed to work with metrical measurements and errors are less likely if they use the units they are familiar with in preparing the plates. Another feature in connection with the arrangement of test letters on the slats is the constant illumination, which, in a set of test letters used to compare variations in vision from month to month or year to year, is important.

As far back as 1866 Dr. H. Derby of Boston wrote as follows in a paper read before the American Ophthalmological Society for that year: "Let the letters used as a test be placed in a room from which the daylight is excluded, and let them be illuminated by a steady flame, uniform in intensity of illuminating power, and placed always at the same distance from the letters." The letters now presented are illuminated by a series of sixteen eight-candle power incandescent lamps with frosted bulbs, placed on each side of the test letters at equal intervals, eight lamps on each side, and screened from the patient by a tin shield. In this way a very even and clear illumination of the test letters is obtained. The lamps are placed in a vertical row on each side of the letters and 25 cm. in front of the plane of the test card. Each line of letters is engraved on a separate plate, so that they can be arranged and printed with the larger letters at the top or at the bottom of the series as desired.

DISCUSSION.

Dr. Dudley S. Reynolds, Louisville, said that at thirty-five feet he can see the letters in the second line, that would indicate acuity of vision = 8/5. In Snellen's test the basis of the test is the establishment of positive infinity at six meters. A nearer approach than that, Dr. Reynolds thinks, would impair the value of the test. Then, too, this artificial light gives such intense illumination as to change the visual angle; it establishes an unnatural condition. No one has such illumination on the street or to read by, and it seems to him that the scientific value of the test is destroyed by this brilliant lighting.

Dr. G. C. Savage, Nashville, Tenn., said that there are two sets of corneal curves. The refractive curves pass through the center of the cornea. The cornea-retinal curves or meridians may pass through the center of the cornea or may not. If the anterior pole is five degrees to the nasal side of the corneal center, then it is impossible for a perfect focus to be on the macula in that eye. The anterior pole is a point on the cornea cut by the visual axis. The posterior pole is the center of the macula. If the axis cuts the cornea to one side of the corneal center, the best focus must be to one side or the other of the macula. It has saved him time and trouble, before sitting down to refract a patient, to take this into consideration. If the anterior pole corresponds to the center of the corneal curve, the patient will have 20/15 vision, but if the anterior pole is located to one side or other of the corneal curve the patient will not have more than 20/20, or perhaps not that.

Dr. C. H. Williams said that Dr. Reynolds does not seem quite to appreciate the fact that the idea of these test types is to retain the Snellen standard angle of five minutes and his formula. Dr. Reynolds' statement that he can see the letters across the room at a greater distance than six meters demonstrates exactly what these types are intended for, and that is that there are a great number of patients who have a greater acuteness of vision than 6/6 of Snellen's standard, and it is desirable to have a form of types which will retain that standard and at the same time enable the ophthalmologist to measure vision of a little more than the six-sixths of his types. In reply to a question Dr. Williams stated the lights he uses in his office are a little less brilliant perhaps and he is not prepared to advocate such intense illumination, though he thinks it necessary to get at a standard illumination.

Special Article

IMMUNITY.

CHAPTER XXVII—(Continued).

TUBERCULOSIS.

Occurrence Outside the Body.

The tubercle bacillus undergoes no proliferation outside the body and its occurrence in nature depends on the distribution of the infected excretions, particularly the sputum, of man. Hence it is found most abundantly in the rooms and homes of patients and in tuberculous wards of hospitals. Reception of sputum on the handkerchief of the patient, where it subsequently dries, and its discharge on the floor in public places, where it quickly becomes pulverized, as in street cars, are conditions which favor dissemination and the infection of others. In unconfined places which are exposed to the action of light and sun, as the streets and sidewalks, the danger is less on account of the shorter life of the organism under these conditions and the greater volume of surrounding air. The calculation of Heller that a tuberculous patient may excrete 7,200,000,000 of bacilli in a day suggests the number which may lurk in a single misplaced portion of sputum. Sputum which is kept moist is not a source of particular danger, inasmuch as ordinary currents of aid do not dissipate it in the form of infected drops. Droplets of sputum which are expelled by coughing contribute greatly to the infected dust which surrounds a patient.

Dried Sputum.

Large quantities of bacilli are often excreted in the feces in intestinal tuberculosis and in the urine in genitourinary tuberculosis, or in general miliary tuberculosis with localization of the process in the urinary organs. The pus from tuberculous abscesses commonly is infectious.

Great interest attaches to the possibility of infection of man by the milk and meat of tuberculous cattle. Previous to 1901, through the work of Smith and others, the opinion had been gaining ground that the bacilli of human and bovine tuberculosis are not identical. It was not always possible to produce tuberculosis in cattle by feeding them or causing them to inhale tuberculous sputum or pure cultures which were highly infectious for other experiment animals, although bacilli of bovine origin invariably caused the disease in cattle when administered in a similar manner. It seemed then that the two bacilli are not identical in their pathogenic powers. Koch having repeated these experiments without being able to infect cattle with bacilli of human origin, expressed his belief that the converse also is true, i. e., that the bovine bacillus is not pathogenic for man. Perhaps the strongest argument in favor of this view is the circumstance that primary tuberculosis of the intestines and mesenteric glands is very rare in children, who drink a great deal of milk, in spite of the great prevalence of tuberculous cows. Many protests followed the announcement of Koch's views, and in a short time a number of investigators showed, first, that it is possible in some cases to produce tuberculosis in cattle with tuberculous material from man, and, second, that infection of man with the bovine bacillus is possible. Unquestionable proof of the latter consists in the development of localized tuberculosis in those who have performed autopsies on tuberculous cattle (Ravanel and others). These occurrences, of course, do not prove the identity of the two organisms, for there is still abundant reason to believe that the two bacilli are most pathogenic for their respective, natural hosts, and much less pathogenic for the alternative hosts. Theobald Smith has pointed out that many experiments in which the pathogenicity of the human bacillus for cattle was investigated by the feeding of tuberculous sputum, must be repeated, inasmuch as it was not determined in advance whether the organism contained in the sputum was of the human or bovine type. Naturally, absolute conclusions as to the pathogenicity of the human bacillus for cattle could not be drawn with this fact undetermined. In some cases the combined sputum from many patients has been fed to cattle, and since both human and bovine bacilli may have been administered, the results are valueless in relation to the point under discussion. In each instance the organism should be obtained in pure culture, its identity as a human or bovine bacillus determined and the experiment performed with such pure cultures.

Bovine and Human Tuberculosis.

The following points serve to distinguish the bovine bacillus from the human: First, the bovine bacillus is shorter than the human; second, when first cultivated it grows feebly in media in which the human bacillus flourishes; third, it has a higher virulence for rabbits and guinea-pigs; and, fourth, it produces more extensive lesions in cattle. To these Smith has added a fifth point, which he has found to be distinctive in a large number of cultures. In bouillon which contains 5 per cent. of glycerin and which is 2 per cent. acid to phenol phthalein the bovine bacillus produces a neutral or faintly alkaline reaction in from three to several weeks, whereas the human bacillus, after causing temporary alkalinity, produces a terminal acidity of from 0.5 to 1.5 per cent. On the basis of this test and other points the bacilli of two cases of mesenteric tuberculosis in man were recognized as bovine in type. In view of the fact that infection of man with the bovine bacillus has been shown to be possible, we are still justified in considering the meat and especially the milk of tuberculous cattle as the probable sources of infection in a limited number of cases.

Differences in the Bacilli.

Comparatively few cases of undoubted congenital tuberculosis have been observed, and in such cases the mothers are usually in an advanced stage of the disease. It is probable that the organisms reach the fetus following metastatic invasion of the placenta. In a number of cases in which the mother had advanced tuberculosis the organs and blood of the fetus (stillborn or dying soon after birth), contained very many bacilli, although histologic lesions had not as yet been produced. Warthin and Cowie suggest that the tissues of the fetus may possess considerable immunity in such cases. Baumgarten is a strong believer in the possibility that tubercle bacilli may pass to the fetus during pregnancy and, remaining latent in some of the tissues (lymph glands) for a long period, cause active tuberculosis later in life. Others who are less radical still admit that we should consider this as a possibility (Warthin and Cowie, Harbitz).

Congenital Tuberculosis.

Pulmonary tuberculosis is by far the most common form of the disease in man, and without doubt this is due to inhalation of the dried and pulverized sputum of tuberculous patients. Direct drop infection may well occur in the case of those who are in prolonged and intimate contact with the sick. In kissing direct infection from mouth to mouth is a dangerous possibility.

Infection Atria.

The reason for the inception of pulmonary tuberculosis in the apex in so many cases is not clearly recognized, although it is often referred to the relative immobility of this tissue, which renders excretion more difficult and affords improper aëration. These conditions not only allow the organisms to accumulate and to proliferate, but the insufficient oxygenation probably causes a low tissue resistance. The suggestion which has been made that apical tuberculosis is the result of extension of the disease from the cervical glands does not correspond with the condition seen in tuberculosis of adults in whom the cervical adenitis is commonly wanting.

The "anatomic tubercle" is a primary infection of the skin; lupus vulgaris, it is supposed, may be either a primary infection or secondary to tuberculosis in some other organ; ulcerative tuberculosis is usually a secondary lesion, often occurring by direct extension from tuberculous lymph glands. Tuberculosis of the nose is uncommon. Infection of the tonsils is not infrequent and probably is a common cause of secondary tuberculosis of the cervical lymph glands. Primary infection of the pharynx sometimes occurs and large, coarse granulations of this surface have been proved in some cases to be of a tuberculous nature. Tuberculosis of the pharynx and larynx, however, most often arises from infection with tuberculous sputum.

In the process of dust infection of the lungs, and also by other means, many organisms lodge on the mucous membranes of the nose, mouth, pharynx, trachea and larger bronchi, but usually without producing a tuberculous infection. The conditions at these points, on account of the movement of the ciliated epithelium, tortuosity of the nasal channels, excretion of the bacilli with mucus are not favorable for infection.

Tuberculous ulcers of the esophagus and stomach are very rare, as is primary tuberculosis of the intestines. Secondary tuberculosis of the intestines is not infrequently caused by the infected sputum which the patient swallows. Primary infection of the genital organs may be caused by direct contact.

That tubercle bacilli have often been found on the hands and finger nails of the sick as well as on those who are intimately associated with them, is a significant fact in relation to the possibility of infection by direct contact.

From a given focus tubercle bacilli extend to other structures in several ways. On more or less theoretical grounds one speaks of "extension by growth" of the organism into contiguous tissues. The commonest method of extension, however, is that of metastasis by way of the lymph channels. When bacilli penetrate a surface, with or without formation of a lesion at the point of entrance, as in the mouth cavity, intestinal canal, or bronchial surface, they are carried to the lymph glands of the region in which the tuberculous process is instituted. As in plague, the infection atrium at times is indicated by the set of glands which is involved. In certain localities the secondary invasion of other structures takes place directly without the intermediate involvement of lymph glands, as in tuberculous meningitis caused by extension from the middle ear, and tuberculous peritonitis or pericarditis by extension from the pleura. Very frequently tuberculosis of the lymph glands and other tissues heals spontaneously, as described below. In case such healing does not occur, metastases eventually continue from one lymph gland to another and to new sets of glands until the larger lymph chan-

Lymphatic Metastases.

nels are reached, as a consequence of which extensive regional or general tuberculosis results. Accidental localization of a focus often causes a wide departure from the slow development just described. Not infrequently tuberculosis in a lymph gland, which is contiguous to a large lymph channel, as the thoracic duct, invades the wall of the latter, the surface softens from caseation or liquefaction and the contents, impregnated with countless bacilli, are gradually thrown into the circulation. Miliary tuberculosis, first of the lungs and then of other tissues, through the arterial circulation, follows such an accident. A similar course, with variations in localization, follows invasion of the walls of branches of the pulmonary artery or vein. Rupture of a focus into a bronchus is followed by regional or more extensive dissemination of the bacilli throughout the lungs by respiratory forces. A slower eccentric extension is seen, particularly in the lungs, in which smaller and larger areas of consolidation occur. By means of short lymphatic metastases into contiguous territory new foci are instituted, which eventually fuse with the original lesion. It is suggested and generally believed that bacilli may be carried longer or shorter distances by wandering phagocytic cells. When tuberculosis once involves a surface like that of the pleura, peritoneum, pericardium or pelvis of the kidney, the whole surface frequently becomes involved in thickly studded miliary tubercles. It is probable that a great deal of dissemination is accomplished by the movements of the fluids and the surfaces of these cavities. In other instances, as in the ureters, Fallopian tubes and spermatic cords, extension seems to occur in the submucous tissue by means of the lymphatics. The autopsy often discloses that tuberculosis which appeared to be "primary" in such organs as bones, suprarenal glands, and meninges was preceded by an old process in a lymph gland from which metastases occurred to the tissues in question.

Other Channels.

Consolidation.

Certain anatomic conditions produced in tuberculosis which are associated with recovery from the disease, or contrary, may be referred to. The tubercle, the histologic unit of the tuberculous process, is produced as follows, according to the interpretations of Baumgarten: When a bacillus reaches a lymph gland, for example, it multiplies slowly and partly through its presence as a foreign body, but particularly through its toxic secretions, injures the surrounding connective tissue and endothelial cells to a certain degree. Under some circumstances, especially in the parenchymatous organs and lymph glands, this injury may be so great as to cause the death of the adjacent cells (focal necrosis). When it is of a lower order the connective tissue and endothelial cells respond to the stimulus by dividing mitotically and eventually accumulate in large numbers within a limited area surrounding the micro-organisms. Not only the endothelial cells of the lymph spaces, but also those of the adjacent blood vessels, take part in the proliferation, many of the vessels being obliterated in consequence. Not infrequently bacilli are ingested by the new cells, although the ability of the latter to destroy the organisms is not clearly established. Metchnikoff says that tubercle bacilli may remain intracellular for many months and although not killed, the pathogenicity is decreased or destroyed. The new cells are of polygonal shape, are fairly rich in cytoplasm, contain large vesicular nuclei and are termed "epithelioid" cells.

The Tubercle.

"Epithelioid" Cells.

Certain of the epithelioid cells, usually those in the center of the tubercle, where the bacilli are most numerous, undergo atypical proliferation in that repeated nuclear division takes place without corresponding division of the cytoplasm. This process results in the formation of the multinuclear giant cell which is so characteristic of the well-developed tubercle, although not distinctive of the disease. According to Weigert, the failure of complete cell division is due to injury to the cytoplasm (partial necrosis) by the bacteria which the cell contains. Metchnikoff and others take a different view of the formation of giant cells, considering that they represent individual epithelioid cells which have fused to form a multinuclear mass.[1]

Giant Cells.

Still more remote from the center of the tubercle, that is, surrounding the epithelioid cells, wandering lymphoid and plasmal cells accumulate. Certain retrogressive changes, especially necrosis and caseation, characterize the further history of the tubercle, although these changes do not occur equally early nor with equal intensity in all cases. Necrosis begins in the center of the lesion, and the view is often expressed that the formation of the giant cell is the first indication of the retrogressive change. Cell degenerations, however, with karyorrhexis may occur before giant cells have formed. With the death of the central tissue there occurs sooner or later the death of many of the bacilli in this portion of the tubercle. The progressive formation of new tissue continues in the periphery as the degenerative changes take place toward the center; the tubercle enlarges, both epithelioid and the surrounding lymphoid cells increase correspondingly, and new giant cells form at the periphery of the necrotic center, only to be included in the degenerated area as the latter extends. In favorable cases, in which the virulence of the organism is low or the resistance of the individual strong, new connective tissue is formed in the periphery of the tubercle and surrounding it. This new tissue is produced by the maturation of the epithelioid cells, the lymphoid and plasmal cells participating in the process, directly or indirectly. With the further growth of the connective tissue the tuberculous area is eventually surrounded by adult fibrous tissue which in a sense accomplishes the isolation of the infected area. Without question such a capsule of scar tissue is an obstacle to the extension of the tuberculous process, whether it surrounds a nodule in a lymph gland, a cold abscess or a tuberculous sinus. Further steps in the healing consist of caseation of the entire area, its partial or complete substitution by connective tissue (tuberculous scars), or partial impregnation with lime salts (calcification). Not infrequently the caseous portion of a nodule undergoes liquefaction, which some have referred to the action of proteolytic ferments. The contents of such foci finally become sterile. In the event that healing of this nature does not occur, the infection is transmitted to other organs as described above.

Retrogressive Changes.

Formation of Fibrous Tissue.

Caseation, Calcification and Liquefaction.

The temperature, loss of weight, fever, increased cardiac action, and arteriosclerosis which are seen in tuberculosis indicate that the products of the bacillus have a profound effect on the functions of the body, and produce great disturbances in metabolism, although they seem to have no marked selective action for particular tissues. Many disturbances are secondary to changes produced in particular organs and not referable to specific action of the toxins, such as those which are consequent on poor oxygenation in pulmonary tuberculosis, and the amyloid degeneration which follows prolonged suppurative tuberculosis.

General and Secondary Disturbances.

Mixed infection, especially with the streptococcus, plays a very important part in the course of pulmonary tuberculosis, especially in the caseous and cavernous forms. Staphylococci, *B. pyocyaneus*, various diplococci, the pneumococcus, bacillus of Friedlander, diphtheria and pseudo-diphtheria bacilli, and the influenza bacillus are also found as secondary organisms in pulmonary tuberculosis. Some of them invade the surrounding healthy tissue, cause lobular consolidations, and in this way probably prepare a favorable soil for further extension of the tuberculous process. They doubtless hasten the liquefaction of caseated tissue, a step in the formation of abscesses. The high and irregular fever often seen in advanced tuberculosis is commonly septic in its cause, and a terminal streptococcus septicemia is not infrequent. It is evident that mixed infections may complicate attempts at serum therapy.

Mixed Infections.

1. A formation analogous to the latter process is seen in the peritoneal cavity of the guinea-pig, in which leucocytes fuse to form a plasmodial mass around yeast cells which are injected.

Clinical Notes

THE METHOD OF GIEMSA FOR STAINING THE SPIROCHÆTA PALLIDA.

LEONARD K. HIRSCHBERG, A.B., M.D.
BALTIMORE.

Under the direction of Professor Charles F. Bevan, of the College of Physicians and Surgeons, considerable study is being given to the *Spirochæta pallida* of Schaudinn and Hoffman. The results of these studies will shortly be published by Professor Bevan and myself. In this search we have been fortunate enough to find *Spirochæta pallida* in the urine of one patient, with active secondary manifestations.

In the meanwhile, since there has as yet been no English or American publication of the stain which has proved so effective in elucidating these organisms, I do not think it out of place or premature to publish Dr. Giemsa's method, somewhat modified from his first description.[1]

GIEMSA'S STAIN.

Azur II—Eosin, 3.00 gms.
Azur II.—0.8 gms.
Glycerin (C. P.), 250 c.c.
Methyl alcohol, 250 c.c.

1. Fix by spreading the specimen very thinly over the coverslip; dry it in the air.
2. Harden it in absolute alcohol for from 25 to 60 minutes and blot with filter paper.
3. Dilute the stain with distilled water. Pour it into a wide graduated reagent glass by shaking 1 drop of the stain to each c.c. of water out of a drop bottle which first has been rinsed in absolute alcohol.
4. Cover the preparation with the diluted stain for from 10 to 15 minutes.
5. Wash off with running water.
6. Blot with filter paper, dry, and mount in Canada balsam.
7. Overstained specimens may be differentiated in distilled water for from one to five minutes.
8. It is often advisable to make the diluting water alkaline by 1 to 10 drops of a 0.01 per cent. potassium carbonate solution.
9. It is doubtful if staining the *Spirochæta pallida* of Schaudinn for more than one hour will define it any more clearly than staining for that period.

UNTOWARD EFFECT OF ADRENALIN IN THE URETHRA.

W. S. JOHNSON, M.D.,
SAN FRANCISCO.

A patient whom I have been treating for stricture of the urethra, and in whom I have passed sounds for several months, came to my office in his usual good spirits, and in perfect health. After passing a No. 27 French sound, there was some little bleeding from the urethra, which I attempted to check with a solution of adrenalin chlorid, 1-4000, injected in the urethra with an ordinary glass syringe, filling the entire anterior urethra. The following symptoms occurred instantaneously: Lividity or pale lead color of the skin; the eyes set and glassy, the patient crying out, complaining of a bursting sensation in his abdomen, chest, neck and head, saying the top of his head would burst open; a tingling and pressure in hands, arms, legs and feet; vomiting of a projectile character, followed by complete collapse, without loss of consciousness, lasting for a period of ten minutes; respiration shallow, pulse imperceptible and heart sounds inaudible; the patient having the appearance of a case of acute anemia. Restoratives, such as strychnin, 1/20 gr., whisky and aromatic spirits of ammonia were used hypodermically and the patient gradually recovered, but was unable to stand on his feet for three hours. The dizziness lasted until bedtime.

1. Deutsche med. Wochft.

A RETENTIVE APPARATUS FOR FRACTURES OF THE CLAVICLE.

RAYMOND RUSS, M.D.
Instructor in Surgery in the University of California.
SAN FRANCISCO.

In the clinical work at the surgical dispensary of the University of California the Sayre adhesive plaster dressing has been used for some time as a routine treatment for fractures of the clavicle. In many cases the results attained were good, but the method of treatment failed in a number of instances. It was not until several of these failures followed closely on one another that the necessity for a better method of treatment became imperative. The most pronounced failures were in those rare cases of fractured clavicle which presented great overlapping of the fragments and in which it was impossible to maintain reduction by the ordinary methods.

A glance over the literature was not reassuring. More methods of treatment have probably been suggested for this fracture than for any other. Pilcher sums up the matter by saying: "The fact remains that those methods which are

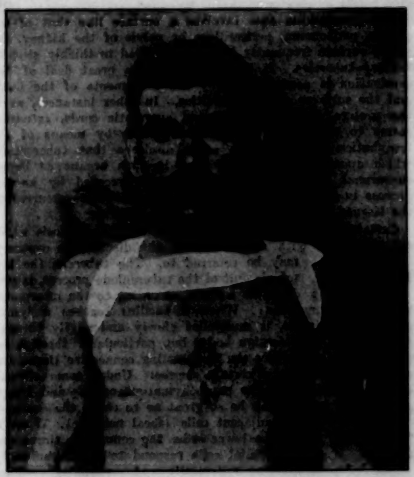


Figure 1.

efficient are intolerable and those which are tolerable are inefficient." Gurlt makes the statement that there have been about seventy dressings devised for the purpose of drawing the shoulder upward, outward and backward, this being the manipulation for reducing the fracture and maintaining reduction which has been adopted by most authors.

As the success of methods of detention depends directly on a knowledge of the displacement and the muscular forces which cause it, a consideration of these subjects will not be out of place.

Deformity following fractures of the clavicle is evidently produced by the weight of the shoulder combined with muscular action. This destroys the juxtaposition of the fragments unless impaction has taken place. The serratus magnus and pectoralis minor muscles pull the scapula forward and inward as pointed out by Gordon of Belfast, and by Packard. But the pull of the serratus magnus is probably counteracted to a certain extent by the action of the trapezius. The acromion is thus carried toward the median line and tilted downward, this movement carrying the proximal end of the distal fragment inward so that many times it lies directly below and behind the inner fragment.

This new position of the outer fragment may force the

inner fragment somewhat upward, the action being aided by the resiliency of the sternal end of the clavicle and probably by a certain amount of pull by the sterno-cleido-mastoid. The subclavius muscle very possibly aids in the production of the malposition of the outer fragment. The excursion of the scapula, however, is almost immediately checked by the levator anguli scapulæ which exerts a strong pull on the superior angle of the scapula, resulting in an approximation to the spine and a slight prominence of the inferior angle.

It is true that the shoulder changes its position after fracture of the clavicle, falling downward, forward and inward, but it must be borne in mind in the treatment that this deformity can not be corrected in all cases by simply lifting the shoulder upward, backward and outward, as recommended by many authors. Not until the scapulæ are brought well back will the fracture be reduced. This fact has long been recognized. It is commented on by Hippocrates, who suggests that the patient be placed on his back, with a small, hard pillow resting between his shoulders. Guy de Chauliac placed his knee between the patient's shoulders and in this way drew them backward.

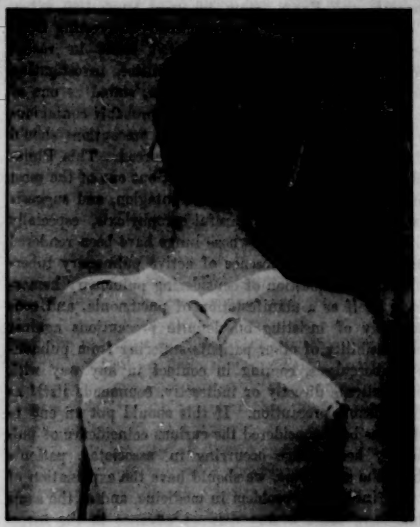


Figure 2.

I have never failed to accomplish reduction, in cases of great overriding, by placing the patient in the position of Hippocrates. Sometimes, however, one must bring the scapula back very forcibly while the patient is lying in this position, and in one of my cases it was found necessary to exert considerable pressure over the point of fracture in order to maintain reduction. This fact has been commented on by Malgaine, who suggested that double hooks, such as he had used in fracture of the patella, might be employed for this purpose. I can find no record of this idea being carried out.

These facts have been emphasized because the underlying principles have been forgotten in many of the dressings which have been proposed. From practical considerations, it would seem that a retentive apparatus should exert firm pressure over the seat of fracture and at the same time should retain the scapulæ in the positions which they assume in the method of Hippocrates.

Plaster-of-paris as a means of maintaining reduction has been used by Davis, O'Connor, Stimson and several others. The following method is designed more especially for those obstinate cases which have been commented on, although it may be adopted as a routine measure. The patient is placed on his back in the position of Hippocrates and, the fracture having been reduced, the limitations of the plaster-of-paris splint are marked on the skin. The dressing should extend a little above and below the clavicles, as shown in Figure 1. It should cover the injured shoulder and should not interfere with free motion of the arm on the uninjured side. The skin is covered with vaselin and a two-inch plaster-of-paris bandage is applied directly, the turns being held down by an assistant so as to secure accurate coaptation, especially about the site of the fractured bone. The bandage can be made to lie smoothly by reversing each turn over the sternum. When a number of layers have been applied a pair of suspenders are incorporated into the dressing. These have previously been prepared by ripping apart the webbing at the point of crossing in the back and cutting away the leather pieces which fasten to the buttons. Each suspender is then slipped through its buckle. There are now two long pieces of suspender webbing, each provided with a buckle at one end. The buckles are thrown over the patient's shoulders, the finished side of the suspender being turned down and the webbing passed under the axilla. The plaster-of-paris bandage is rapidly turned over the suspenders so as to secure them to the cast, and when enough turns have been taken to make the cast sufficiently strong to resist muscular action, it is finished by

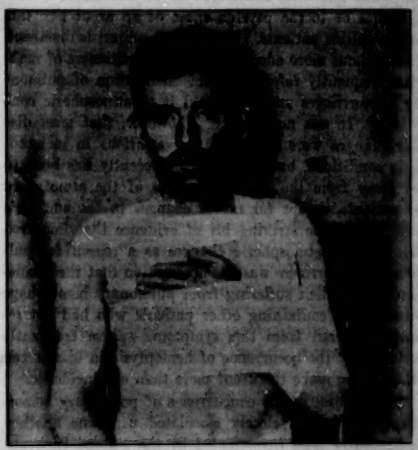


Figure 3.

rubbing in a little dry plaster. It is then removed and trimmed to the desired shape, the edges being smoothed by rubbing in plaster-of-paris. With the patient in the position of Hippocrates the splint is reapplied, a layer of cotton, several layers of sheet wadding or a thin layer of felt being interposed. It is secured in position by buckling tightly so as to form a figure-of-eight posteriorly (Fig. 2). It is essential that the dressing be applied tight enough to resist muscular action. The arm on the injured side is then supported by applying a figure-of-eight cravat as shown in Figure 3.

In certain selected cases the time of functional disability may be greatly shortened by employing a modification of this splint. For this purpose the plaster-of-paris should well clear the injured shoulder. The patient may be given free use of the injured arm after a few days' time. It is evident that if this be done slight movement at the seat of fracture will occur, no matter how tight the apparatus be made. In those patients who do not object to a slight callus deformity and in whom disability is a great hardship, I deem it a proper procedure.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue .... Chicago, Ill.

Cable Address ... "Medic, Chicago"

Subscription price ..... Five dollars per annum in advance

SATURDAY, OCTOBER 7, 1905.

HEMOPTYSIS AND THE PNEUMOCOCCUS.

An interesting point in regard to pulmonary hemorrhage which has been known for many years but has not received the attention it deserves is the fact that when patients suffering from tuberculosis are collected together, and pulmonary hemorrhage occurs in one, it is almost certain to be noted in other patients during the course of the next week. As a rule, this association of symptoms has been considered to be due either to coincidence or to the psychic effect of an event like this on susceptible patients. Usually the subject is dismissed thus without more ado. The older practitioners of medicine frequently referred to this association of pulmonary hemorrhages and attributed it to atmospheric conditions. It was not long ago, however, that most disease changes were attributed to variations in meteorologic conditions, but the tendency recently has been to get away from the supposed effects of the atmosphere on patients, except for minor changes in the sufferer's condition. One striking bit of evidence that impaired the value of atmospheric changes as a reason for pulmonary hemorrhage was the observation that the admission of a patient suffering from pulmonary hemorrhage into a ward containing other patients who had not recently suffered from this symptom, was so frequently followed by the occurrence of hemoptysis in one or two others as to make the event more than a coincidence.

This subject of the concurrence of pulmonary hemorrhage in patients closely associated with one another, has recently been investigated by the Phipps Institute, of Philadelphia, for the study and treatment of tuberculosis, with very practical results. In a preliminary report[1] it is noted that in the ejected blood of a number of cases of pulmonary hemorrhage pneumococci in large numbers were found. The reason for investigating as to the presence or absence of this micro-organism was the fact that even in normally healthy individuals who contract pneumonia, there is a well-known tendency for exudation of blood from the pulmonary vessels manifested by the characteristic rusty sputum of the disease. In four cases of pulmonary hemorrhage carefully investigated the presence of pneumococci seemed to point to some definite etiologic relation between the presence of this micro-organism and the special symptoms noted in the cases.

In two of the cases, there was a history of exposure to pneumonia, and in one a history of contact with a just previously hemorrhagic patient. In three of the cases, pneumococci were found in the blood from the patient. Streptococci were associated with the pneumococci, but there was a definite preponderance of the latter, and in some of the cases it was found in practically pure culture. Only four cases were investigated so completely as to make them available for absolute conclusions, but observations made in other cases point to the same conclusion, that the pneumococcus, if it does not play the only rôle, at least plays a very important one in the production of pulmonary hemorrhage, even during the progress of what seems to be an ordinary case of pulmonary tuberculosis.

All this investigation is, as the authors, Drs. Flick, Ravenell and Erwin, state, of great suggestive value. It opens up one of the most practically interesting fields for investigation that has presented itself in recent years. The New York City committee, investigating the present prevalence of pneumonia, stated as one of its conclusions, that pneumonia was probably contagious to a limited degree and that proper precautions should be taken, therefore, to prevent its spread. This Philadelphia investigation seems to point out one of the most important phases of pneumonia contagion, and suggests also the necessity for careful prophylaxis, especially with regard to patients whose lungs have been rendered susceptible by the presence of active pulmonary tuberculosis. The question of considering pulmonary hemorrhage itself as a manifestation of pneumonia, and consequently of insisting on definite precautions against the possibility of other patients suffering from pulmonary tuberculosis, coming in contact in any way with such patients directly or indirectly, commends itself as an advisable precaution. If this should put an end to what has been considered the curious coincidence of pulmonary hemorrhage occurring in associated patients about the same time, we should have the explanation of a very interesting problem in medicine, and at the same time have made a very distinct advance in the investigation of the occurrence of one of the most serious symptoms that disturb the progress toward health of sufferers from pulmonary tuberculosis.

1. Med. News, New York, Sept. 9, 1905, p. 492; abstracted in The Journal, Sept. 23, 1905, p. 944.

DIGESTION LEUCOCYTOSIS AND CANCER OF THE STOMACH.

The observation that the leucocytes in the circulating blood are increased after eating is an old one. First noted by Nasse in the middle of last century, the observation was then incapable of rigorous scientific proof, but was finally subjected to accurate tests by Limbeck in 1890. Since then numerous hematologists have convinced themselves that a digestion leucocytosis occurs, though there have been doubters who claimed that the varying counts at different times of the day are due to a normal fluctuation independent of the consump-

tion of food. It was natural that some attempt should be made to apply this observation in the physiology of the blood to the study of the pathology of digestion. It was fair to assume that lesions of the stomach might be followed by changes in this digestive leucocytosis, and Muller, in 1890, was the first to announce that this was the case. His observation, that in cancer of the stomach the normal digestion leucocytosis is lacking, has been investigated by numerous observers and, in the main, has been upheld. Vanstenberghe and Breton,[1] in connection with an investigation of their own, have collected the published results on the subject, showing that of one hundred and sixty-three cases of carcinoma of the stomach a digestion leucocytosis was present in only twenty-nine. Their observations support the view that a distinct digestion leucocytosis exists, reaches its acme about two hours after the first meal, and is independent of the normal variation of the leucocytes at different times of the day.

The value of digestion leucocytosis in the diagnosis of carcinoma of the stomach has been differently stated by different observers. Some have stated that it is of no value, but a glance at the table of Vanstenberghe and Breton shows that this opinion has been based on altogether too small a number of cases—two in the case of Hassmann, three in the case of Burian and Schürr. Where large numbers of cases have been observed, the conclusion reached has generally been that the test is at least of confirmatory value. In the largest series of cases reported, those of Cabot and Capps, thirty-four out of thirty-seven cases showed the absence of a digestion leucocytosis. The twenty-two cases of Osler and McCrae, however, showed absence of digestion leucocytosis in only a little over one-half. Control tests of the leucocytosis in new growths of neighboring organs, as the liver and pancreas, show that in these cases also there may be an absence of the digestion leucocytosis. New growths of distant organs, as the uterus and intestine, do not cause an absence of the digestive leucocytosis, nor do other gastric disturbances, such as ulcer. Vanstenberghe and Breton have shown that there is a difference in the character of the digestion leucocytosis as compared with that due to the normal daily range. In the digestion leucocytosis it is the mononuclear elements which are relatively increased, while in the normal daily range it is the polynuclears which fluctuate.

The conclusion which is to be drawn from these observations seems obvious. The figures collected by Vanstenberghe and Breton are large enough to show that carcinoma of the stomach has a decided effect on the digestion leucocytosis in a great majority of cases. The sign is, of course, not a pathognomonic one, but must be of value nearly as frequently as the examination of the stomach juice. It seems as if it must be of considerable use as confirmatory evidence in a great many cases, and on this account, as well as on account of its simplicity, it should be used more extensively than it has been.

1. Arch. de Méd. Expér., 1905, xvii, 471.

ASEPSIS BEFORE BATTLE.

Surgeon-General Suzuki of the Japanese Navy, in his address[1] last week before the Fourteenth Annual Association of Military Surgeons of the United States told of two customs that were introduced into the Japanese navy during the recent war, which were of extreme interest and likely to be far-reaching in their influence, because they are simple and, as a rule, possible. It is no wonder that a distinguished medical authority in the United States Navy is reported to have said in comment that the Japanese surgeon-general had made perhaps the most valuable contribution of modern times to naval surgery. The suggestions that were carried into effect under his directions, however, are so obvious that it is rather difficult to understand how they did not occur to martial surgeons before this. Although the suddenness of the attack would often prevent their use in land engagements, naval combatants usually have sufficient warning of a battle to allow at least a brief preparation. Dr. Suzuki considers that much of the Japanese success in the treatment of wounds must be ascribed to the order issued before every engagement, that each member of the crew should take a bath and put on perfectly clean underclothing.

His idea is that gunshot wounds are likely to be contaminated by portions of clothing carried into the wounds. The bullet itself may be considered perfectly sterile because of the high temperature to which it has been exposed, and which has continued during its course through the air, thus making it practically impossible for it to collect any virulent germs from the atmosphere. If then the clothing be reasonably sterile, the hope of a sterile wound resulting is greatly increased. As a matter of fact, very few of the sailors and marines wounded during the Japanese naval battles and sieges suffered from septic complications. Very severe wounds, even those which penetrated joints, healed as kindly, as a rule, as those which might be made by the surgeon's knife, under careful asepsis in an operating room. operating room.

A corresponding set of aseptic precautions was long since adopted by French duelists and has saved many a peppery Frenchman from septic complications that might have resulted under other conditions even from slight wounds. This, however, is not the only improvement worthy of note in the medical care of their sailors and marines that the Japanese surgeon-general has introduced. He considers that the vision of the men who aim the guns on a warship must be of the very best if their shots are to reach the target. Before every engagement, therefore, the naval surgeons carefully examined the eyes of all the gunners. Even the slightest impairment of vision was considered suffi-

1. An abstract of this address is crowded out this week; it will appear next week.

cient to require prompt treatment and if the treatment was not likely to improve vision in a few days, substitutes were selected to fill the places of the ailing ones. During naval engagements, the crew of every battery was furnished with a 1 per cent. solution of boracic acid, with which the men were instructed to wash out their eyes should they become affected by powder, smoke or dust or dirt of any kind, or be irritated for any other reason.

There is no doubt that the Japanese military and naval surgeons have been extremely ingenious in inventing methods of preventing complications of all kinds. Their application of the asepsis of the French duelists to the many combatants of a naval engagement is a triumph of enterprising application of simple knowledge that stamps them as much more than the mere imitators they are sometimes said to be, and sets them in the rank of the most progressive of modern nations.

YELLOW FEVER.

There is now indisputable evidence that the epidemic is well under control. In New Orleans the improvement has been marked. During the entire week ending October 1, only 193 new cases were reported, with 24 deaths. In Louisiana, outside of New Orleans, not over 150 new cases were reported in the same period. The infected points in Mississippi reported an equal number, and Pensacola 75. Scientific methods have won at every point where they have been thoroughly applied. At Vicksburg and Pensacola the populace is more or less hostile, due to the active opposition of men who should know better. Right-thinking men are astonished at the spectacle of substantial men, in time of crises, actively opposing the efforts of science to conserve human life. All during the epidemic the town of Harriston, Miss., has had an absolute non-intercourse quarantine—so-called—not admitting either freight or passengers, yet it recently has had two cases of yellow fever. It has been demonstrated that there need never again be another epidemic of yellow fever if the first cases are promptly discovered, honestly reported and carefully screened.

SOCIETY CONVERSAZIONE.

At a recent meeting the Pennsylvania State Medical Society introduced what it announced as a new departure, familiar enough at medical conventions in England, but not often attempted in this country, and perhaps never before at a state medical society meeting. In addition to the refreshments and music by a full orchestra, at a general reception given to members, a series of popular addresses was announced for later in the evening. While the younger members of the society and their friends might enjoy the dancing and the music, the more serious-minded attendants at the function had the opportunity to hear various authorities speak on scientific subjects that are of special interest at the present time. Dr. Kellicott, of Columbia, New York, for instance, talked on mimicry and protective coloration, with illustrations of this ever-interesting subject. Mr. Kelsey, of Philadelphia, the well-known architect and landscape gardener and the designer of the model city at the St. Louis Fair, delivered an illustrated lecture on methods of beautifying cities. There was a demonstration of radium and of the mercury-tube light invented by Mr. Cooper Hewitt, of New York. Besides this, there were less special features, as a lecture on travel by a well-known popular lecturer, a presentation of methods of mining by means of stereopticon views, special attention being given to the process of anthracite coal mining and the dangers involved in them. Dr. Hollister's collection of Indian relics of various kinds, one of the most noteworthy collections in the country, was on exhibition, as well as Dr. Everhart's collection of native woods and other interesting specimens. No little anxiety to the members of the committee of arrangements is often caused in their endeavors to fill up an evening. This is certainly an interesting way and it is worth considering by other state societies. Under the busy conditions in which they live, physicians seldom have the time to keep abreast of recent scientific developments, though they may desire very much to do so.

FIRST AID IN RAILROAD ACCIDENTS.

In view of the great and rapidly increasing number of fatal and disabling railroad accidents the proposal by certain railroads to drill their train crews in first aid instruction and to establish frequent small hospitals along its line is worthy of commendation. If accidents must happen, and some of them are probably unavoidable, it is really criminal to leave them unprovided for. That a great many more occur than should, makes the need a still more urgent one. It might not be policy to advertise hospital advantages with excursion rates, but to have first aid and hospitals at hand when needed would be one of the best things possible—next to preventing the accidents.

THE PURE FOOD QUESTION.

While Congress is inexcusably dilatory in legislation, Uncle Sam himself in his personal transactions is wide awake as to the importance of pure foods. Adulterated sausages were recently found among the supplies at one of our navy yards and the seller has been arrested and put under bonds, and the matter is to be brought before the federal prosecuting authorities. While there is said to be no federal special statute against selling adulterated food to the government, it is thought that the general law against fraud of any kind will cover the case. It is a pity that corrupt commercialism can avoid penalties under such laws for the public generally, but such seems to be the case. If the medical profession will do its duty and use all its influence we do not believe that the enactment of a federal pure food law can be long prevented. We trust that our leaders will look up the records of their senators and congressmen and act when opportunity offers to insure so far as possible the election of those who are on the right side in this matter.

AN INTERESTING STUDY OF TYPHOID.

It is to be hoped that the outbreaks of typhoid fever, which occur from time to time in various localities and which are usually carefully analyzed in relation to cause, are making a strong impression on the public. The infection is usually due to carelessness—often in either water or milk supply. An instructive report[1] of a study of the Palo Alto epidemic is just received; the milk was at fault in this case. Of the total 236 cases in the epidemic, 216 used milk supplied by one dairyman; 16 others may have been secondary infection, although they used milk supplied by the same milkman; 2 cases were infected while away, and only 2 cases occurred without known connection with the objectionable milk or with previous cases. The portion of the pamphlet by Dr. W. F. Snow on the source of infection in the milk supply shows careful analysis and contains an interesting topographic diagram on which is marked all the movements of milk and of those involved in its contamination. The pamphlet is published as a public document by the Palo Alto Board of Health and the facts brought out—particularly the diagrams—ought to be effective for good.

"SCIENTIFIC WORK MISREPRESENTED AND COMMERCIALIZED."

Two weeks ago we published in our Pharmacology department an exposé of the manner in which the M. J. Breitenbach Company, for advertising purposes, had made an abstract of the official report of the Porto Rico Anemia Commission and had totally misrepresented the conclusions reached by the commission in regard to the value of a preparation which the Breitenbach Company are selling, called "pepto-mangan (Gude)." This week we publish an official statement from the Porto Rico Anemia Commission, which corroborates the statement we made two weeks ago, except in unimportant particulars. There is one sentence in the letter from members of the commission which is worth noting: Speaking of the fact that had they found the peptomanganates of superior value as blood regenerators they would have said so, they add: "As it is, we have said the contrary and wrote this company to that effect at the time we became convinced of it." If the Breitenbach Company received this letter, then they must have deliberately, not ignorantly, misrepresented the commissioners' report.

MEDICAL ADVICE IN LAY PAPERS.

It is a pleasure to note an exception to the questionable character of the departments which appear in various lay publications giving advice on medical subjects. One that has just come to our notice[2] is worthy of commendation—if the initial number is a criterion of what is to follow. In introducing the department the editor remarks that, unless he is mistaken, "there are thousands of things which the people ought to know, which the strictest ethics of the medical profession will approve. . . . We are not among those who think that the medical fraternity is composed of men and women who are entirely mercenary, and while we do not desire or expect them to teach us how to do without a doctor, we do believe, as a rule, that they are ready to co-operate with us in things connected with our every-day life essentially affecting our health and well-being." The physician chosen as editor of the department says that he proposes to conduct the department strictly on ethical lines and makes the following most appropriate quotation from the Principles of Ethics:[2] It is the duty of physicians who are frequent witnesses of the great wrongs committed by charlatans and of the injury to health and even destruction of life caused by the use of their treatment, to enlighten the public on these subjects and to make known the injuries sustained by the unwary from the services and pretensions of artful impostors." He therefore gives the following good advice: "Choose your physician instead of letting him choose you" (by making a display in the community to attract attention). "He should, first of all, be a Christian gentleman. He should be a graduate of an accredited medical school, and if he should happen to have a college degree, all the better, as that is some evidence that he has had additional mental training. He should be temperate; God pity the man, woman or child who has to submit to the ministrations of a doctor whose brain is clouded by liquor or narcotics. . . . We have had considerable to say about doctors, now a word about their remedies. That the American people have become a nation of drug guzzlers is, alas, too true, and a fact greatly to be deplored. The daily press is not without sin in regard to the habits of self-drugging by the people. They recommend—at so much per line—the use of this or that drug without knowing themselves the possible evil effects which may be produced. The public ought to be impressed with the fact 'that drugs are tools by which the physician accomplishes a given end; and, like all other experts' tools, should be handled by experts.'" This and much more on the same subjects. The physician in charge has laid a good series of premises and we shall expect to see more solid sense in future issues.

THE DIRTY RESTAURANT KITCHEN.

It is commonly said that every man must eat his peck of dirt. If the truth were known, this might be found a very mild statement. Some of us are unconsciously habitual dirt eaters. If we could inspect the places where our food is prepared, many of us would require powerful appetites to meet the occasion. This is particularly true of those who have to depend more or less on public eating places. While there are undoubtedly clean restaurant kitchens, there are a very great many more that are far from meeting the simplest requirements of tidiness and sanitation. Of course, the most comfortable thing to do is to eat what is set before one and ask no questions, but the possibilities for reform

1. "Typhoid Fever Epidemic at Palo Alto, Cal. A report made to the Palo Alto Board of Health." By J. C. L. Fish, Assoc. M. Am. Soc. C. E., president of the board. Including an Analysis of Reported Cases by Clelia Duel Mosher, M.D., and Source of Infection of the Milk Supply by William Freeman Snow, M.D.

2. Word and Works, St. Louis, October, 1905.

2. The Principles of Medical Ethics of the American Medical Association, Chap. III, Sec. 4.

should not be neglected. The suggestion that municipal authorities inspect and enforce proper cleanliness and sanitary requirements in public restaurants is well worthy of attention. Moreover, the reform ought to be easy. If it were known which restaurants are worthy of public patronage in this respect, they would be likely to get it to the disadvantage of those that are not. There is a wide field for reform here not only in the methods and material outfit of these establishments, but also in their personnel.

THE HARVEY SOCIETY.

The Harvey Society of New York is described in its constitution as "a society for the diffusion of the knowledge of the medical sciences." The particular object, judging from the program of its first course of lectures, appears to be to bring the results of investigations in the medical sciences directly to those engaged in the practice of medicine as well as to others. The lectures are given under the auspices of the New York Academy of Medicine. The program[1] of the course for 1905-6 includes lectures by Professor Hans Meyer on "Die Theorie der Narcose;" Professor Carl von Noorden, "Modern Problems in Metabolism;" Professor F. G. Novy, "Trypanosomes;" Dr. R. A. Levene, "Autolysis;" Professor W. H. Park, "A Critical Study of Serum Therapy;" Professor L. F. Barker, "The Neurones;" Professor F. S. Lee, "Fatigue;" Professor L. B. Mendel, "The Formation of Uric Acid;" Professor T. H. Morgan, "Regeneration in Man and Other Vertebrates;" Professor C. S. Minot, "The Nature and Cause of Old Age;" Professor J. C. Webster, "Modern Views Regarding Placentation;" Professor Theobald Smith, "Some Phases of Tuberculosis," and Professor W. H. Howell, "The Cause of the Heart Beat." This is certainly a distinguished company, and the Harvey Society is congratulated on the solid attractiveness of its first annual program. It was a happy idea to establish a society of this kind and purpose. It means a new agency for the popularization, especially among the medical men of New York city, of the results of scientific investigation in various fields of medical and also general interest. Perhaps other medical centers may find it advantageous to establish somewhat similar means for the same general purpose.

1. For dates, etc., see General News, this issue.

Physicians' Fees.—There is, it seems to me, one just plan by which fees should be regulated. It is that the physician should have an estimate of the value of his services, operative or otherwise, fixed in his mind. The amount should be based on his experience and skill. It should not be so low as to coax away unjustly the patients of the younger and less experienced men of the profession. This fee should be lessened when the financial position of the patient would make its payment a serious burden. A well-to-do patient should pay the full fee, which should be generous in order to recompense the physician for his expensive education and hazardous life. This fee, however, should not be increased because the services of the physician are utilized by a very wealthy person, unless an unusual time is given to the service or an additional responsibility is placed on the physician by reason of the man's position.—John B. Roberts.

Medical News

GEORGIA.

Changes in Atlanta College Faculties.—Dr. William S. Elkin has been elected dean of the Atlanta College of Physicians and Surgeons, to succeed Dr. William S. Kendrick, and Dr. Stephen T. Barnett, registrar; Dr. James B. Baird has been appointed professor of principles and practice of medicine; Dr. Charles G. Giddings, professor of clinical medicine; Dr. E. Bates Block, professor of clinical medicine, and Dr. Cyrus W. Strickler, associate professor of principles and practice of medicine. The faculty proposes to erect a new building to cost $75,000, of which $30,000 has already been subscribed.

New Medical School.—The Atlanta School of Medicine opened October 3 in its temporary quarters in the Masons' Annuity Building with the following faculty: Dr. Howard J. Williams, Macon, special lecturer on surgery; Dr. William S. Kendrick, professor of medicine; Dr. Charles D. Hurt, professor of therapeutics; Dr. George H. Noble, professor of abdominal surgery and clinical gynecology, dean of the faculty; Dr. James M. Crawford, professor of diseases of the eye, ear, nose and throat; Dr. Edward C. Davis, professor of gynecology and obstetrics; Dr. Luther C. Fischer, professor of anatomy and clinical surgery; Dr. Edward G. Jones, professor of gynecology and obstetrics, proctor of the faculty; Dr. Frank K. Boland, professor of operative and clinical surgery and demonstrator of anatomy; Dr. Hansell Crenshaw, professor of materia medica and chemistry; Dr. Stewart R. Roberts, professor of physiology; Dr. James L. Campbell, professor of surgical anatomy and clinical surgery; Dr. William L. Champion, clinical professor of genitourinary diseases; Dr. Robert B. Ridley, Jr., clinical professor of diseases of the eye, ear, nose and throat; Dr. L. Benjamin Clarke, lecturer on diseases of children, and Dr. James H. Crawford, assistant to chair of diseases of the eye, ear, nose and throat.

IDAHO.

State Society Meets.—The Idaho State Medical Society held its annual meeting in Boise, October 5 and 6, under the presidency of Dr. Robert L. Nourse, Hailey.

Personal.—Dr. Adolph Blitz, Boise, who has been ill at St. Luke's Hospital with erysipelas, has recovered.——Dr. John H. Messner, Lewiston, has been extradited to the state of Washington, where he has been charged with arson.

Decides Against State Board.—The Supreme Court has decided that the refusal of the Board of Medical Examiners to grant a license to Dr. J. B. Cooper, Blackfoot, was illegal, as the applicant was legally engaged in the practice of medicine and surgery under the law of 1887, and in accordance with this decision Dr. Cooper was given a license.

ILLINOIS.

Diphtheria Epidemic.—An epidemic of diphtheria is reported to have broken out at Carpentersville, Kane County.

Examination Postponed.—The examination of candidates for the Cook County Hospital staff, which was to have been held September 27, has been postponed.

Donates Hospital Site.—Dr. John W. Tope, Oak Park, has agreed to purchase a site for the proposed Oak Park Hospital, consisting of six acres in Fair Oaks, in the northern part of the village.

Doctors Ill.—Dr. J. H. Porter, Clinton, has gone to Chicago to be operated on for cholelithiasis.——Dr. Lorenzo A. Snyder, Chicago Heights, is critically ill in a Chicago hospital from appendicitis.

Maternity for Evanston Hospital.—A maternity hospital adjoining the Evanston Hospital is to be built as a memorial for the late Mrs. Elizabeth Williams, whose six children have contributed $25,000 to the building fund.

Rattlesnakes as Security.—"Dr." White Eagle, an Indian itinerant, who was recently fined $100 in Blandinsville for illegally dispensing medicine, left a box of rattlesnakes with the authorities as security and has disappeared.

Family Blamed for Death.—In the case of the late Hartford Wiltse, Momence, who died from typhoid fever, the mother and sisters of the deceased, who are "eddyists," were censured by the coroner's jury, whose verdict declared that the man came to his death from typhoid fever and that the evidence showed lack of proper attention.

Antitoxin Agents Appointed.—The secretary of the State Board of Health has appointed antitoxin agents in various counties of the state under the provision of the new law.

The duties of these agents are to distribute antitoxin certified by the State Board of Health to the poor on order of the supervisor, to be paid for by the county, and to sell to those who apply at a fair price.

The Work of the Coroner.—During September 36 more deaths were reported to the coroner than for the preceding month. The total number of deaths requiring investigation was 330. Of this number 40 were suicides, 38 of whom were white and 2 negroes; 31 were men and 9 women, one being a schoolgirl 15 years old; 21 left wives or husbands, 10 were unmarried, 4 were widowers, 1 was a widow and 3 were divorced. The pistol was the favorite means of suicide and carbolic acid held the first place among the poisons employed.

Chicago.

No Smallpox.—For the first time in fourteen years the Isolation Hospital was without a smallpox patient September 26.

Buys Land for Hospital.—Max Eichberg has purchased the building and ground at 3040 Calumet Avenue for $40,000 and will turn it over to the Calumet Hospital.

Asks for More Inspectors.—The commissioner of health has asked the finance committee of the City Council for an appropriation of $6,000 so that he may add six food inspectors and six sanitary inspectors to his present force.

Hospital Reorganized.—St. Ann's Hospital, formerly limited to the treatment of tuberculosis, has been reorganized as a general hospital and a new medical staff has been appointed consisting of Drs. Helga Ruud, John T. Milnamow, Charles E. Humiston, John J. Meany, B. Mack, Fred L. Glenn and Gustavus P. Head.

The Policlinic Transferred.—The Chicago Policlinic Hospital has transferred its property to the Chicago Policlinic for a consideration of $61,000. The latter organization is preparing to erect its new hospital at Oak Street and La Salle Avenue and has obtained a building loan of $300,000 through its president, Dr. Fernand Henrotin, for this purpose.

September Mortality.—The deaths from all causes for September were 2,101, equivalent to an annual rate of 12.78 per 1,000. This is the lowest, with one exception, on record, and the average rate for the decade was 13.95 per 1,000. Acute intestinal disease still heads the list with 451 deaths, followed by consumption with 219, violence including suicide with 190, heart diseases with 163, nephritis with 144, and pneumonia with 122.

Deaths of the Week.—During the week ended September 30, 481 deaths occurred, equivalent to an annual death rate of 12.54 per 1,000. This compares favorably with the death rate of the corresponding week of the previous year, 12.61, and with that of the previous week, 13.40. Acute intestinal disease still holds the lead in death causes with 75, followed by consumption with 57, violence including suicide with 37, heart diseases with 35, nephritis and pneumonia, each with 34, and cancer with 28.

INDIANA.

Health Officers Resigned.—Owing to dissension with the city council, the Board of Health of Columbus, composed of Drs. Richard E. Holder, W. D. Treadway and J. R. Dunlop, has resigned.

Consolidation of Medical Colleges.—Formal announcement has been made of the consolidation of the Central College of Physicians and Surgeons, Indianapolis, with the Indiana Medical College of the same city, and of the incorporation of the two schools as an integral part of Purdue University.——It is reported that the directors of the Fort Wayne College of Medicine will meet in a few days for the purpose of discussing the advisability of merging that institution with the medical department of Purdue University.

IOWA.

College Opens.—The Sioux City College of Medicine opened for its annual session September 19. Dr. George S. Browning delivered the address. Dr. E. A. Jenkinson has been elected professor of embryology, Dr. George S. Browning professor of electro-therapeutics, Dr. Isaac E. Nervig instructor in anatomy, and Dr. E. Ruel Wheeler assistant to the chair of physiology.

Railway Surgeons' Meeting.—At the annual meeting of the State Association of Railway Surgeons, Des Moines, September 21-23, Dr. William Van Werden, Des Moines, was elected president; Dr. Smith A. Spillman, Ottumwa, vice-president; Dr. Albert B. Deering, Boone, secretary (re-elected), and Dr. E. C. McMeel, Delmar, treasurer (re-elected). The next meeting will be held in Des Moines.

Personal.—Dr. John N. Warren, Sioux City, returned from Europe September 27.——Dr. Albert P. Johnson, Sigourney, who was injured several days ago at Rock Island, Ill., in a railroad wreck, is now convalescent.——Dr. Kurt Jaenecke, Clinton, has sailed for Europe.——Dr. Willis W. Dean, Sioux City, left September 20 for the state of Washington.——Dr. Walter A. Sternberg has been elected city physician of Mount Pleasant, vice Dr. John Elliott, resigned. ——Dr. John F. Harp, Prairie City, has been reappointed local surgeon for the Des Moines Valley Railway.——Dr. Maxwell E. Silver, Sioux City, has located in Detroit, and is demonstrator of anatomy and lecturer of osteology in the Michigan College of Medicine and Surgery.

MARYLAND.

Ravages of Typhoid.—A family in Caroline County (Eastern Shore), has been attacked with a virulent form of typhoid fever. The father, mother, two daughters and a son are dead; another son is in the hospital, while two daughters and one son are convalescing.

Diphtheria at Naval Academy.—Owing to the prevalence of diphtheria among members of the new fourth class at Annapolis, the opening of the United States Naval Academy has been postponed until October 7. Meanwhile Bancroft Hall will be thoroughly fumigated. Members of the fourth class are forbidden to leave the limits of the academy. The first, second and third year classes are now on vacation. The members of the football team have returned and are domiciled in Carvel Hall Hotel. There are nine midshipmen affected, and about a dozen others have shown symptoms and are under observation. None of the patients is in a dangerous condition.

Baltimore.

The First Appeal.—The first appeal for aid to the fund for the relief of widows and orphans of deceased physicians was made last week by a physician's widow, aged 70, without support.

Much Tuberculosis.—The reports of the health commissioner show three times as many cases of consumption reported as last year. Consumption caused 29 of the 197 deaths in Baltimore last week.

Physician Wins Suit.—In the case of Dr. J. William Funck, in which damages of $10,000 were claimed for alleged unskillful treatment of fracture of the wrist, a verdict was rendered for the defendant September 27.

Naval Secretary as Auctioneer.—Hon. Charles J. Bonaparte, Secretary of the Navy, announces that he will act as auctioneer at the sale of autographed books to be held in November by the Quarter Club for the benefit of the Hospital for Consumptives.

Personal.—Prof. Hans Meyer of Vienna will lecture October 4 and 5 on pharmacology in the Herter course at Johns Hopkins University.——Dr. H. Barton Jacobs has been named as one of the delegates to represent the United States at the Tuberculosis Congress in Paris, October 2 to 7.——Drs. T. Caspar Gilchrist and William H. Welch have returned from Europe.——Dr. Ira Remsen returned from Northeast Harbor, Maine, September 27.

After Many Days.—The mayor has signed the ordinance providing for the erection of an infectious diseases hospital on ground owned by the city near the Almshouse (Bayview Asylum). Plans will be prepared at once so that the building can be occupied as soon as possible. Thus at last, after twenty-five years or more, the authorities are about to provide for this so greatly needed institution.

MASSACHUSETTS.

Health Board Appointed.—Drs. Albert C. Lane, J. Henry Hutchings and Charles T. O'Brien have been appointed a Board of Health for Woburn.

Chronic Hospital Patients.—The latest report shows that there are 803 patients in the Boston Chronic Hospital, located on Long Island, Boston harbor.

Bequests.—By the will of Mrs. Marcia A. Norris, Boston, $5,000 is left to the Children's Hospital, $5,000 to the New England Hospital, and $4,000 to the Wellesley Convalescent Home for Children.

Hospital Music.—The hospital music fund, under the direction of Dr. John Dixwell, begins its work in October. Concerts will begin October 1 at the Home for Aged Women; October

8, at Channing Hospital; October 15, at Vincent Memorial Hospital; October 22, at Home for Aged Colored Women; October 27, at Franklin Square House, and October 29, at the House of the Good Samaritan.

Tuberculosis Camp a Success.—The camp on Parker Hill, Roxbury, maintained by the Boston Association for the Relief and Control of Tuberculosis, and started early in July, has proved a great success. It will be continued till about November 1. The total expense has been about $1,300. For this sum about forty-five patients have been cared for each day, returning to their homes to sleep.

Boston's Consumption of Water.—The city of Boston consumed during the month of August an average of 87,999,800 gallons of water each day. From the same metropolitan system there was furnished to seventeen other adjacent towns and cities a daily average of 27,433,200 gallons. This total daily average supply of 115,432,800 gallons exceeded the daily average consumption of August, 1904, by 6,412,200 gallons.

Sanitary Measures in Progress.—The big cofferdam, the first step in the construction of the great water park which is to be between Boston and Cambridge, so long urgently sought for by the Massachusetts Board of Health, is finished. So, too, is the cleansing of the ponds of the Back Bay fens where the foulness of sewers has for many years collected. Both of these will greatly promote the health of the neighboring residential portions of the city.

MICHIGAN.

Colleges Opened.—The formal dedication and opening of the new building of the Michigan College of Medicine and Surgery, Detroit, took place Sept. 19. On behalf of the alumni of the Association of the college, its chairman, Dr. Charles F. Kuhn, presented to the institution an oil painting of the dean, Dr. Hal C. Wyman.——The Grand Rapids Medical College opened for the fall and winter term September 26.

Personal.—Dr. A. Arthur McLarty, Manistee, has returned from Europe.——Dr. James Wright, formerly a practitioner of Jennings, has been committed to the Northern Michigan Asylum, Traverse City.——Dr. William K. West, Calumet, has been appointed head physician of the Copper Range Consolidated Company.——Dr. Joseph Foster has been appointed oculist and aurist, and Dr. Harry A. Haze medical examiner for the Lansing Suburban Traction Company.

NEW YORK.

College Opens.—The University of Buffalo Medical Department began the winter sessions Monday, September 25. Dr. George F. Cott delivered the opening address, in which he advocated a six-year course, saying that the present course of four years is not sufficient.

Personal.—Dr. H. Ernest Schmidt, White Plains, has returned from Germany much improved in health.——Dr. Albert E. Woehnert, Buffalo, has recovered from an operation for appendicitis.——Dr. Frank W. Hinkel, Buffalo, has returned from abroad.——Dr. Patrick A. Hourigan, Buffalo, who has been ill with blood poisoning, is recovering.——Dr. Bernard Bartow has returned from Wanakah.

The Water Supply.—The state water supply commission has asked the attorney-general whether the 200 private water companies in this state are subject to the control of the commission in like manner as are the municipal boards. One hundred questions relating to purity of water supply and disposal of sewage have been formulated, to be asked of the 906 villages, towns and cities of the state. The best water and filtration plants will be visited and the water supply of Buffalo and Niagara Falls will be investigated.

Many Consumptives Helped.—The trustees for the New York State Hospital for Incipient Pulmonary Tuberculosis, located at Ray Brook, have issued their completed statistics for the first year, which show an excellent percentage of recoveries and improvements. There were admitted 207 patients, more than half of whom were incipients. There were no deaths. Of 105 patients discharged, 52 were apparently recovered. There were reported 26 arrested cases, 16 improved, and 11 without improvement. These latter cases remained but a few weeks. Of the 105, 90 gained an average of 10.57 pounds each. The trustees of the hospital are Dr. Willis G. MacDonald, Albany; William A. Douglass, Buffalo; Dr. Elmer E. Larkin, Plattsburg; W. E. McClary, Malone.

New York City.

More Yellow Fever at Quarantine.—A coal passer aboard the steamer *Havana*, from Colon September 24, died from yellow fever on Swinburne Island September 26.——Five of the crew of the British steamship *Lindisfarne*, from Cienfuegos, have been held for observation. The vessel had been at Colon and several of the crew had been ill with the fever.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended September 23, 350 cases of tuberculosis, with 142 deaths; 155 cases of diphtheria, with 18 deaths; 124 cases of typhoid fever, with 15 deaths; 60 cases of measles, with 1 death; 62 cases of scarlet fever, with 1 death; 11 cases of cerebrospinal meningitis, with 15 deaths, and 20 cases of varicella.

Herter Lectures.—The Herter Lectures, established by Dr. C. A. Herter at the New York University and Bellevue Hospital Medical College, will be given this year by Prof. Carl von Noorden, chief of the City Hospital of Frankfort, Germany. His subject will be "Diabetes." The six lectures will be given in English in the large auditorium of the Carnegie Laboratory, 338 East Twenty-sixth Street, from Monday, October 9, to Saturday, October 14, inclusive, at 4 o'clock in the afternoon. Visitors are welcome.

Fear an Eye Epidemic.—Several eye specialists declare that ophthalmia will follow the Mardi Gras carnival at Coney Island. Influence was brought to bear on the carnival committee which resulted in posters being freely displayed about Coney Island to warn confetti throwers that any person who gathers the torn bits of paper from the pavement and throws them at another person will be arrested and, if found guilty, will be punished by either a fine of $100 or six months' imprisonment. Physicians have treated several cases of iritis at the Coney Island Reception Hospital which have resulted directly from throwing confetti.

Personal.—Dr. Thomas Darlington, health commissioner of New York, addressed the workingmen of Hartford, Conn., September 25 on the subject of "Tuberculosis," treating his topic from the economic standpoint.——Dr. and Mrs. Morris L. King, who are making a journey around the world, have left India and started for London en route for New York.——Dr. John W. Roble returned from Europe on the *Ryndam* September 26.——Dr. E. Harrison Griffin returned on the *Minneapolis* September 26.——Dr. Milton J. Ballin returned on the *Hamburg* September 27.——Dr. Alma Vedin sailed for Europe on the *Finland* September 30.

Some Results of Food Inspection.—During the year 1904 food inspectors condemned and destroyed 2,000,000 pounds of meat. The small dealers and push-cart men are closely watched and frequently 5,000 pounds or more of their wares are destroyed in a single day. During the past year 848 samples of foodstuffs were subjected to analysis and this resulted in nearly 8,500,000 pounds being destroyed. There are about 1,500,000 quarts of milk shipped to New York daily and more than 30,000 samples are collected and analyzed in the course of a year. The fines last year amounted to over $10,000 and over 75,000 quarts were destroyed. It is said that the system of inspection of fruits is so rigid that it is next to impossible for a barrel of apples, a case of oranges or a bunch of bananas to slip through unnoticed.

Cripples Become Self-supporting.—The New York City visiting committee of the State Charities Aid Association reports that the inmates of one ward of the Home for the Aged and Infirm on Blackwell's Island, which is devoted to paralyzed, rheumatic and epileptic, were induced to take up bead work. The interest spread until 20 out of 60 men in the ward were at work. The Brooklyn division of the home has also taken up the work. Improvements have been installed in the farm colony on Staten Island. The dormitory has been enlarged and three cottages completed, providing room for about 500 inmates. The value of the farm products has increased from $5,000 in 1902 to $12,000 in 1904. In Brooklyn the committee found that present hospital facilities are inadequate and that there is great need for increased capacity in existing plants as well as for the establishment of several smaller hospitals.

College Opens.—At the opening of the College of Physicians and Surgeons in the City of New York, September 28, Dr. Samuel Lambert, dean of the college, delivered an address on "Some Present Fallacies in Medical Education." He declared that four months of vacation was too much. As most professors and students took up work during vacation it was surprising that the summer session was not better attended. The cause probably was that the subjects taken, except in two cases, were not counted for degrees. He suggested that the university change this. Another fallacy was trades unionism in medical education, inasmuch as the curriculum, like trades unions, limited the work to be done by its members. Another fallacy was the confirmed habit of the medical student to modify the existing curriculum to meet his individual ideas and his commonest error was to run away from the required

duties to enter some hospital as a substitute for one of the house staff. The college should supply such work as a part of the curriculum.

OKLAHOMA.

Meeting of Southwestern Tri-state Medical Association Postponed.—Owing to the quarantine restrictions, the meeting of the Southwestern Tri-state Medical Association of Oklahoma, Indian Territory and Texas, at Oklahoma City, has been postponed from October 17-18 to November 8-9.

PENNSYLVANIA.

District Censors Chosen.—At the September meeting of the Huntingdon County Medical Society Dr. Charles A. R. McClain, Mount Union, was recommended for district censor.——Dr. W. D. Hamaker, Meadville, was chosen district censor by the Crawford County Medical Society.

National Guard Appointments.—Capt. Louis P. McCormick, Connellsville, has been commissioned major-surgeon in the N. G. Pa., and assigned to the Tenth Infantry.——Dr. James F. Elder, New Brighton, has been commissioned first lieutenant and assistant surgeon in the same command.

Philadelphia.

Personal.—Drs. Francis Packard and J. Norman Henry have returned from Europe.——Dr. Frank W. Lally was severely bruised in an automobile accident near Allentown, September 24.

Hospital Reports.—From August 24 to September 21 the German Hospital admitted 239 patients and discharged 200; 19 patients died and the number remaining on the latter date was 167.——The report of the Jewish Maternity Hospital shows that an unusual amount of work was done in the hospital during the three months ended August 31, as 182 patients, including 19 remaining from May, were cared for in the hospital, receiving 2,204 days' support. In the out obstetric service 25 infants were born, necessitating 152 visits from physicians. Patients paid 447 visits to the several clinics and 417 prescriptions were compounded.

Health Report.—The total number of deaths reported for the week ended September 30 was 384, being a decrease of 25 from the preceding week and a decrease of 14 from the corresponding week of last year. Among the deaths 193 were of men, 191 of women, 73 of boys and 50 of girls. The principal causes of death were as follows: Typhoid fever, 14; tuberculosis, 45; cancer, 22; apoplexy, 18; paralysis, 10; heart disease, 38; acute respiratory diseases, 38; gastritis, 34; diarrhea, 31; Bright's disease, 17; premature birth, 14; congenital debility, 13; old age, 8; accidental injuries, 25; marasmus, 9. The number of cases of contagious disease reported for the week were: Diphtheria, 34; scarlet fever, 32; typhoid fever, 95, making a total of 161 cases, with 18 deaths, as compared with 184 cases and 13 deaths for the previous week.

Medical Colleges Open.—The opening exercises of the one hundred and fortieth annual session of the Department of Medicine of the University of Pennsylvania were held in the new medical laboratory, September 29. The principal address was delivered by Prof. Alfred Stengel. No important changes have been made in the courses, although the school has lost, by resignation, Dr. Alfred W. Miller, assistant professor of materia medica; Dr. Robert J. Formad, demonstrator of normal histology; Dr. John M. Swan, demonstrator and students' physician; Dr. George P. La Roque, assistant in surgery, and Dr. Samuel McClary, assistant demonstrator of normal histology. The following new men have been added to the teaching staff: Dr. Ewing Taylor, associate in anatomy; Dr. Henry L. Bates, assistant in physiology, and Dr. Rufus B. Scarlet, voluntary assistant demonstrator of pathology.——The annual session of the Medico-Chirurgical College convened September 25.——The annual opening of Jefferson Medical College was held September 25, and the annual address to the students was delivered by Hon. William Potter, president of the board of trustees.

Suppressing Abortionists.—No more serious duty has in recent years confronted regular practitioners than that of the enforced removal of the band of abortionists who seem to have made Philadelphia their headquarters. With this object in view a committee of three was appointed by the Philadelphia County Medical Society April 20, 1904, to aid the coroner, the director of public safety and the district attorney in the securing of evidence against and in the prosecuting of those performing criminal abortions. At the meeting of the society September 13 Drs. Francis M. Perkins, Charles W. Burr and Henry W. Cattell submitted the following report of their labors:

Your committee begs leave to report that it has investigated over thirty persons making a practice of performing criminal abortions in the city of Philadelphia and that at the present time each one of these has either left the city, is under police surveillance (6), is a fugitive from justice (7), is awaiting trial (7), or is in prison serving time (8).

Your committee in its entirety or individually has paid frequent visits to Coroner Dugan, District Attorney Bell, Director Smyth, and Director Potter, and have been most courteously received by these gentlemen and believe the support of the society is assisting them in the performance of their duties has been much appreciated.

As an additional example of what has been done may be cited the case of one of the Philadelphia newspapers which formerly carried in its Sunday edition 10 to 17 advertisements of criminal abortionists, and which now no longer prints this objectionable kind of matter.

So much having been accomplished it is hoped that the County Medical Society will never permit this nefarious business again to assume such vast proportions in Philadelphia as was the case in the early part of 1904. It would seem to the committee that the only way to prevent this now that the city is largely freed from criminal abortionists, is to have the matter taken up by the State Medical Society and the American Medical Association, so that when the abortionists are driven from one city they will not immediately go to another place and carry on work of a similar nature. Thus several years ago an earnest endeavor was made to drive this class of persons out of Boston and as a result Philadelphia received several of the worst specimens with which the authorities have had to deal. Then, too, it is so easy to live in New York or New Jersey and to come over to Philadelphia a certain number of days each week. If a central committee of the American Medical Association could be established with affiliating committees in the various large centers, your committee believes that much good could be accomplished thereby.

VIRGINIA.

Hospital Association Formed.—An association has been formed at Leesburg for the purpose of establishing a hospital. It will start with a capital of $2,000, to be later increased. Dr. Rebeka Wright of Washington, is at its head. The movement is receiving the active support of physicians in Leesburg and vicinity.

Doctors Object to Special License.—The *Medical Legislator*, published by the Medical Society of Virginia, contains articles condemnatory of the special license tax varying from $10 to $25 a year, which is now imposed on physicians. The aim of the society is to compel the repeal of this act. It is claimed that the medical is the only profession from which such license tax is exacted.

GENERAL.

Yellow Fever in Panama.—During the week ended September 9 four new cases of yellow fever were reported in the city of Panama, three of which were fatal. No cases have occurred in either Colon or Cristobal since August 26, and there have been no suspicious cases observed in the hospital since that date.

Health Report of the Isthmian Canal Commission.—The report for August calls attention to the continued excellent health conditions among the laborers working on the canal. It is stated that yellow fever is steadily decreasing; during August there were only 27 cases. This is the smallest number of cases since April. In May there were 33, in June 62, in July 42. The report also includes a description of the methods employed in inspecting houses and of notifying tenants that houses are in an insanitary condition. There is a detailed account of the general sanitary work done and of the results accomplished.

Death of Mr. W. B. Saunders.—Mr. W. B. Saunders, the well-known medical book publisher of Philadelphia, aged 47, died Monday, October 2. Mr. Saunders started medical book publishing in 1891, and in the short time since then, has built up one of the largest medical book publishing concerns in the country, if not in the world. His energy, his honesty of purpose and his genial disposition won him success and many friends in the medical profession. He leaves a wife and two children, the latter aged, respectively, 12 and 16. Mr. Saunders has been ill and unable to attend to his business for several months. We understand that the business will be conducted as heretofore.

Health of the Non-immune Employes of the Canal Commission.—The Public Health and Marine-Hospital Service reports that the health of the non-immune employes of the canal commission residing at Cristobal is at present exceptionally good, no cases of yellow fever having occurred among them during the past month, and the number of cases of malaria having greatly diminished. This is undoubtedly due to the improved sanitary conditions, mosquito work and screening of the living quarters. Strong westerly winds have also contributed to keeping the town comparatively free from the swarms of mosquitoes from the surrounding swamps. A general feeling of encouragement prevails, but the efforts and vigilance of the sanitary department are in no wise being relaxed. It is proposed by the sanitary department to keep the large numbers

of non-immunes arriving on the isthmus out of the sphere of infection as far as possible. A camp in the canal zone along the line of the railroad is to be established, to which the new arrivals are to be taken and where they will be held until they can be distributed to points outside the cities of Colon and Panama. This is considered especially advisable in the case of the Colombian laborers, many of whom come from the mountainous interior.

Health in the Philippine Islands.—The report of the Board of Health of the Philippine Islands for June shows that 600 births were registered during the month. Of these 326 were males and 274 females. The report states that if these were the only births that occurred the birth rate would be 32.57 per thousand, but as it is positively known that many births were not reported it is impossible to state the exact birth rate. During the month 583 deaths were reported, of which 526 were of residents and 57 of transients. Convulsions of children caused 108 deaths, the largest number from any one disease; pulmonary tuberculosis caused 90; diarrhea and enteritis (under 2 years), 32; chronic enteritis, 30; dysentery, 29; congenital debility, 26; meningitis, 24; bronchitis (acute and chronic), 42; beriberi, 14; cerebral congestion and hemorrhage, 14; other diseases, 88. The mortality among children belonging to the groups of under thirty days and from thirty days to a year is the lowest proportion which has been observed up to the present time. Three deaths were registered in Cebu and one in Cavite from bubonic plague. The prophylactic measures which have been carried on with perseverance and activity have yielded the expected results and the archipelago has been practically freed from the former yearly epidemic of this disease.

Yellow Fever.—The figures are as follows in New Orleans: Total cases to October 2, 3,042; total deaths, 394; death rate, 12.9; new cases week September 26 to October 2, 185; deaths, 23; cases under treatment October 2, 204. In Louisiana, outside New Orleans, twenty infected points for the week September 25 to October 1 report 121 new cases. In Mississippi, week September 26 to October 2, Natchez has 29 new cases, making to October 2 a total of 102 cases and 6 deaths—a death rate of 5.8 per cent. Vicksburg has 43 new cases, 5 deaths, making to October 2 a total of 115 cases and 14 deaths—a death rate of 12 per cent. Eight other infected Mississippi towns report for the week September 25 to October 1, 66 new cases and 1 death. In Florida, Pensacola has: Total cases to October 2, 163; deaths, 27; death rate, 16.6 per cent.; new cases September 26 to October 2, 58; deaths, 9. Under the charge of Dr. Chassaignac, the situation at Tallulah, La., has very greatly improved. Armed with a permit from the Mississippi Board of Health, Dr. Chassaignac set out to visit his home in New Orleans. In passing through Jackson, Miss., local quarantine guards refused to recognize his permit and even used physical violence to keep him from changing cars.——Business and pleasure in New Orleans are resuming normal activity.——Three additional cases of yellow fever have occurred among refugees in Cincinnati.——A death from yellow fever occurred at the New York quarantine.——The Arkansas quarantine is being slightly relaxed.——Georgia has quarantined against the whole state of Mississippi.

FOREIGN.

Royal Medical and Chirurgical Society of London.—The hundred and first session of this society will commence Oct. 24, 1905.

Enteric Fever in Germany.—During the early part of September enteric fever was practically epidemic in Posen. The total cases reported till the end of the month was 305.

Cholera in India.—The cholera epidemic in Madras seems to continue unabated, the daily returns being still very high. It is reported, according to *Public Health Reports*, that outbreaks have occurred in both the general hospital and the government lunatic asylum. A number of schools and colleges are closed.

Simple Test for Blood in Urine.—Sabrazès adds 10 drops of hydrogen dioxid to 10 c.c. of the urine to be examined. In the presence of even microscopic amounts of blood the fluid bubbles up and the froth is more abundant and lasts longer than when the bubbling is due to the presence of pus or alkaline salts. In normal urine only a very few bubbles are observed.—*Nord Médical*, September 15.

Openings for Physicians in Foreign Countries.—A committee was appointed by the medical society at Liège, Belgium, to investigate the chances for openings for Belgian physicians in other countries. The only lands that offer any chances for success, according to the report recently presented by the committee, are the East Indies, Persia, Asiatic Turkey, Egypt, Morocco, Haiti, Mexico, San Domingo, New South Wales and Southern Australia. Even in these countries the foreign physician can not rely much on any resources except his private means. The report urges the establishment of a postgraduate clinic on tropical diseases at Antwerp.

Smallpox Epidemic in Southern Africa.—Johannesburg is facing an epidemic of smallpox attributed to infection from letters sorted out by a mail clerk suffering from smallpox. Over 2,000 persons received letters which had passed through his hands, according to cable reports, and the persons affected are mainly Europeans. The more crowded native quarters have been comparatively exempt so far.

French Physicians' Finances.—At the inauguration of the Normandy Medicolegal Society Professor Brouardel of Paris stated that the pecuniary condition of physicians in Paris was worse than it was 30 years ago. When he was elected president of the Association of Physicians of the Seine district, 18 years ago, only $6,000 had to be disbursed for the assistance of orphans and widows of members during the year, while last year the disbursements for this purpose were over $12,400 and the amounts had been reduced from $190 to $140.

Russian Physicians Delay Return from War.—After the Russo-Turkish War fully eighteen months elapsed before the majority of the physicians of the campaign had returned home. They did not feel at liberty to return as long as their hospitals contained severely sick and wounded patients. The *St. Petersb. med. Wochft.*, commenting on this fact, remarks that it will probably be more than two years before the physicians in the far East can return to their home duties in Russia. Many parts of Russia are suffering from a lack of medical attendance owing to the absence of the regular physicians in the East.

International Radiology Congress.—The Roentgen Congress had but scarcely closed its doors at Berlin when a congress devoted to radium and radiology in general was planned. The Belgian government has perfected its organization, in connection with the international exposition now being held at Liège. Radium, radioactivity, the radium rays and their application in therapeutics, etc., are to be the main subjects discussed. The list of speakers includes Henri Becquerel, the discoverer of the radioactive substances; Svante Arrhenius, the great authority on physical chemistry; Birkeland of Christiania; Sir William Ramsay of London; Himstedt, Riecke, Righi of Bologna; Lassar of Berlin, and others.

New Biophysical Journal.—The publishing house of Gebrüder Borntraeger, Berlin, announces the publication of the *Biophysikalisches Centralblatt*, an organ devoted to collecting summaries of what is written on the subjects of biology, physiology and pathology, excluding biochemistry. It is to form the second part of the *Centralblatt f. d. gesamte Biologie*. The volume is to cost $7.50, except to those already subscribers to the *Biochemisches Centralblatt*, who can obtain it at reduced rates. The editors are C. Oppenheimer and L. Michaelis of Berlin, with collaboration of Hertwig, von Leyden, Kraus and Orth of Berlin, Tigerstedt of Helsingfors, Hering of Leipsic and Biedermann of Jena.

Infant Mortality in Various Countries and International "Drop of Milk" Congress.—The percentage of deaths of infants under one year in the general mortality is 42 in Saxony, 38 in Bavaria, 33.9 in Prussia, 31.8 in Austria, 26.1 in Cuba, 19.2 in the United States, 17.4 in Sweden, and only 15 in France. The low infant mortality in France is due in large part to the Roussel law, the law passed in 1874 by the efforts of the physician and senator, Dr. Roussel, which ensures medical and police surveillance of every child less than 2 years of age who is boarded out. This custom of giving infants out to nurse and be cared for is very prevalent in France. The infants are generally placed in country homes, and are supposed to have the benefit of pure air and milk. Another factor in the low infant mortality in France is the "infant consultations" frequently mentioned in these columns (see page 1033), with their milk supply departments. An international conference of all interested in these "infant consultations" is to convene at Paris October 20-21. The secretary and treasurer is Dr. Paul Roger, 39 rue de Berry, Paris.

An International Congress Where All Spoke the Same Tongue.—International congresses are generally a confusion of tongues, discounting the Tower of Babel for the effect produced, but a congress was held recently at Boulogne, France, where all spoke esperanto. This is the artificial language invented by a Polish physician in 1887, which has been slowly gaining ground during the years since in spite of numerous criticisms of its defects. A French exchange describes the con-

gress as a gathering of 1,500 members who were able to converse with each other on the common ground of esperanto, although coming from the remotest corners of the civilized world. Dr. Zamenhof's grammar of esperanto has been translated into 28 languages, and there are 20 monthly journals devoted to its propaganda. At Paris alone 30 public courses of lectures on esperanto were held last winter. The jealousy of the various nations prevents the general adoption of any one language for the common tongue for scientists of all lands. It actually seems as if some artificial language might answer the purpose, but it should be one based on the terms common to all the tongues in current use and not an arbitrary coining of uncouth sounds which has been the defect of the various artificial languages hitherto proposed.

Antituberculosis Congress.—Elaborate preparations have been made for the great antituberculosis congress which opens this week at Paris. More than 3,500 members are said to have registered, coming from all quarters of the globe, 33 countries having organized national committees of propaganda for the congress and appointed delegates. The delegates represent the leading authorities not only of medicine, but also of organized charities, of sickness and life insurance interests, of hygiene and of sociology. France has been divided into districts in which the question of tuberculosis among the population has been studied along the most improved lines, the data collected presenting several new features. The antituberculosis museum is to remain as a permanent exhibition. One of the exhibits is two contrasting rooms. One is fitted up by the Touring Club and shows a model hygienic and attractive room. The other, with curtains, carpets, poor lighting and ventilation, shows what not to do to avoid tuberculosis. Our French medical exchanges regard the congress as a week destined to mark history. The fee of $5 entitles to the transactions with 46 addresses, the preliminary report with abstracts of the addresses in English, French and German, to a pamphlet containing all the data in regard to the battle against tuberculosis in France, with other publications and the insignia of the congress, a beautiful little souvenir by a prominent artist.

Epidemics in Europe.—Cable dispatches dated October 3 state that no new cases of cholera developed during the preceding twenty-four hours, and only four in the twenty-four hours before that. The German authorities are much gratified at the workings of the measures taken against the disease. Although cases have occurred in more than fifty different localities, yet none has developed into a local focus. All can be traced to river traffic, and the rivers have been subjected to vigilant supervision. Every vessel is inspected by a physician once a day at least. The prophylactic measures have proved practicable and efficient, and the policy of absolute openness in regard to the cases has proved very reassuring to the public. The Moabite Hospital at Berlin has had a special building set apart for cholera patients, with a second barracks for the suspicious cases and a third for the attendants. In case of an epidemic, the entire hospital is to be devoted to cholera patients. The people are warned to boil the water, particularly as a number of cases of typhoid have occurred. The *St. Petersb. med. Wochft.* for September 16 reiterates that no cases of cholera have been reported in the Russian Empire. Our German exchanges have ceased to mention the epidemic of cerebrospinal meningitis, which seems to have died out, no new cases having been reported for some time. The total number of cases since the first was reported last November has been 3,250, with 1,750 deaths.

Early Diagnosis of Pregnancy.—Weissenberg writes from southern Russia to the *Allg. med. Ct.-Ztg.* for September 16, to call attention to the difference in the consistency of the two halves of the uterus in the first months of pregnancy. He has examined 120 pregnant women to determine the frequency of this variability in the consistency of the halves, and found the left side soft and the right hard in 6 women by the fifth week, in 28 by the sixth week, in 7 by the seventh week, in 12 by the eighth week, in 12 by the tenth, in 7 by the twelfth and in 1 by the fourteenth week. He found the right side soft and the left hard in 2 women in the fifth week, in 11 in the sixth week, in 3 in the seventh week, in 10 in the eighth week, in 5 in the tenth week, in 3 in the twelfth and in 1 in the fourteenth week. The livid aspect of the vagina mentioned by some writers as an early sign of pregnancy was observed very pronounced in 5 women in the sixth week, in 1 in the seventh, in 10 in the eighth week, in 8 in the tenth week, in 7 in the twelfth week and not afterward, while there was no livid appearance in 5 by the fifth week, in 20 by the sixth week, in 4 by the seventh week, in 6 by the eighth week and in the same number in the tenth week. The introitus was slightly livid in 2 women in the fifth week, in 13 in the sixth, in 10 in the seventh, in 6 in the eighth, in 3 in the tenth, in 2 in the twelfth and in 2 in the fourteenth week. The women were examined from week to week. He adds that the peasants are now as averse to large families as the dwellers in city flats, and the women are becoming ingenious in devising excuses for curettement, etc., to trap the physician into terminating the pregnancy.

Third Scientific Latin-American Congress.—This congress opened under favorable auspices August 6, at Montevideo, Uruguay, the presence of the president of the republic and of the entire diplomatic corps lending brilliancy to the inauguration. Delegates from all the Latin-American countries were in attendance, and much attention was devoted to interstate sanitary co-operation, measures to curb the white slave trade, arrest the spread of alcoholism and of various diseases, etc. The *Brasil-Medico* has already begun to publish summaries of some of the addresses, among them of Carrasquilla's article on leprosy. He preaches that leprosy is not contagious, but that it is infectious, and that it is transmitted by the flea. The first manifestation of the disease is a pustule, similar to the bubo of syphilis and of plague. It is not transmitted by the secretions nor by water nor by direct contact, but only by the intermediation of the flea. Isolation is absolutely unnecessary, freedom from vermin ensuring non-infection of others. J. Novaes described a form of beri-beri, accompanied by anesthesia to heat and pain in certain regions. He has always obtained good results from copious venesection and saline infusion, with dietetic and diuretic measures, sometimes applying leeches along the spine, in the triangle of Petit and in the popliteal space. The forms with anesthesia display a tendency to a more chronic course. In regard to plague, Monis remarked in regard to the prevalent opinion that the plague patient recovers if the bubo suppurates, that suppuration occurs because the patient has survived long enough for this to happen. Monis of Bahia proclaimed the great value of serotherapy of the plague as an adjuvant.

LONDON LETTER.

Self-supporting Sanatoria for the Treatment of Consumption Among the Working Classes.

An organization has been formed to carry out this object. Its importance is shown by the fact stated at the last annual meeting of the Hospital Saturday Fund that in London alone 16,000 persons, whose lives might be saved by proper treatment, annually die from consumption. It is computed also that in London 80,000 persons suffer from one or other form of tuberculosis. A national committee of which the Princess Christian is president has been established under the auspices of the Hospital Saturday Fund for the establishment of sanatoria for workers suffering from tuberculosis. It is an exceptionally representative body and includes delegates from practically all the great friendly societies and trade unions. An appeal is being made to the public for $250,000 to provide a building and to acquire a site for the first sanatorium for the accommodation of 200 patients. About $30,000 has already been promised and a suitable site has been secured at Benenden in Kent. The various societies and trade unions guarantee the cost of maintenance, but under the terms of their constitutions they can make only small donations toward the building. The sanatorium will thus be self-supporting and no appeal will ever again be made to the public for funds. An investigation made by the Ancient Order of Foresters is interesting in this connection: The average cost of sick pay to a consumptive is three times as great as that to a person dying from another disease.

Outbreak of Typhoid Fever Due to Shellfish.

In the neighborhood of the Teign in Devonshire an outbreak of typhoid fever has occurred which has been proved to have been caused by the consumption of cockles taken from that river. The local health officer has issued a notice advising people to refrain from eating shellfish, most of which is collected from the rivers into which large quantities of sewage are poured. The pollution has been going on for years and every year about the months of August and September a number of cases of typhoid fever occur.

Penalty for Facilitating the Spread of Disease.

A young man was charged before a magistrate with walking about and mixing with the public while suffering from diphtheria. He suffered from sore throat and went to a hospital, where the house physician told him he was suffering from diphtheria and must be at once isolated and sent to the fever hospital. He, however, left the hospital, promising to return in an hour, which he did not do. The house physician had no

power to detain him, but reported the case to the sanitary authorities. The diagnosis was verified by the culture test. Three days later the man went to a physician who at that stage failed to recognize the disease and told the man he might go to work. The patient did not tell him that diphtheria had been diagnosed. The magistrate severely admonished the man and fined him $25.

The Open-air Treatment of Acute Disease in Children.

At the Northeastern Hospital for Children, situated in one of the poorest districts of London, an advance has been made beyond that of similar institutions in the open-air treatment of both acute and chronic diseases in children. A striking feature of this hospital is the open-air balconies which front the main building. Here all through the summer months the sick children may be seen lying out of doors in their cots and the operations of the wards being conducted in the open air. Cases of pneumonia, typhoid fever, summer diarrhœa and other acute diseases are being treated with the greatest benefit. It has been found, however, that certain diseases are not amenable to this treatment, for example, heart disease. This appears to be due to the noise and bustle of the traffic of the populous street below in its passage over the stone blocks of the roadway. But these cases have done remarkably well since the treatment has been conducted in the open air at the back of the hospital, removed from the sight and sounds of the traffic. It is suggested that the work of the hospital would be assisted if the roads were paved with wood instead of stone. The balconies have been found especially useful in the case of young children who are convalescing. These children would no doubt be better at the seaside or in the country, but, unfortunately, children under the age of 3 are not admitted to convalescent homes. On the balconies delicate, puny, wizen-faced children put on flesh and become rosy and buoyant—a result which could not have been attained had they been drafted straight away to their homes in the slums. In Liverpool also the increasing need for the open-air treatment of disease in children has been realized. In 1899 a ward containing twenty beds was opened for this purpose at the West Kirby Home for Convalescent Children—a Cheshire seaside resort. Soon a permanent hospital containing 200 cots will be erected. During the greater part of the day the children at West Kirby are, when weather permits, in the open air. When it is wet and cold they are sent to a well appointed sun room. In the summer the doctors visit many of their patients in the grounds of the hospital. This scheme deals only with the more chronic cases of illness in children. The advantage of treating acute disease in children in the open air had not been put into practice before the London Northeastern Hospital adopted it. These results may be compared with those obtained in the floating hospitals of New York.

The Use of Boric Acid to Preserve Milk.

The vexed question as to the use of boric acid as a preservative of milk has again occupied the courts. As usual, the medical evidence was conflicting. At Wakefield a dairy company was charged with selling milk adulterated with boric acid to the amount of 4.8 grains to the pint. Dr. Kaye, the health officer, said that he thought that the use of boric acid was not only injurious to health, but was a dangerous cloak for insanitary conditions in connection with milking. For the defense Dr. Bradshaw of Liverpool stated that the disuse of milk preservatives in Liverpool during the last year greatly increased the infantile death rate, chiefly from diarrhœa, as the milk without the use of preservatives rapidly became putrescent. Dr. Bradshaw held that the administration of small doses of boric acid was not injurious to health, while the conditions under which the milk is kept by the poor are such that if preservatives are not used decomposition with its attendant dangers is certain to occur. The case was dismissed, as the bench was not satisfied that boric acid in the quantity specified was injurious.

Research in Tropical Diseases in India.

A scheme for the provision of more adequate means of studying diseases in India has recently been considered by the government of that country. From time to time various plans have been discussed, but financial and other difficulties have prevented the adoption of a complete scheme. The brilliant work accomplished by some officers under circumstances of great difficulty and the successful administration of the Pasteur Institute at Kasauli, has led the government to hope that if the means are supplied they will obtain from among their officers a staff of scientific workers worthy of the problems that confront them. A new scheme is to be introduced which will render it unnecessary for officers to go from India to Europe to study the bacteriology and parasitology of tropical diseases. It is expected that workers from Europe will seek Indian laboratories to use the unrivaled material which the country affords. The government scheme comprises the establishment of a central research institute at Kasauli and a laboratory for scientific, medical and sanitary work at the headquarters of each provincial government. The functions of the central laboratory will be original research, the preparation of curative sera and the training of scientific workers. The functions of the provincial laboratories will be primarily the provision of expert assistance for the provincial medical and sanitary officers, but the superintendents of these laboratories will be encouraged, as far as opportunities allow, to prosecute original research. Kasauli possesses great advantages for the central laboratory. Its climate is temperate, it is easy of access by rail, it is the site of the Pasteur Institute and large hospitals are near. The first director of the central research institute will be Lieut.-Col. Semple, M.D., whose successful administration of the Pasteur Institute has marked him as possessing the zeal and capacity necessary for the great task before him.

A New Departure in the Management of Outpatient Departments.

The complaints of the profession against the abuse of hospitals, particularly of the outpatient departments, by patients well able to pay for medical assistance, are as persistent as they are futile. A new system which has been adopted in one of the smaller London hospitals, the Bolinbroke at Wandsworth, however, seems to have solved the difficulty. Casualty patients are seen only once unless they bring a card signed by a physician. The same principle is observed in the outpatient department proper. Patients are not admitted unless they are accompanied by their physician or bring a card or letter from him. After the patient is examined he is given a letter addressed to his physician, containing the opinion of the hospital physician or surgeon on the case and his advice as to treatment. No medicines are dispensed and any that are required must be obtained through the patient's physician. This plan has been carried out for several years with success.

The Declining Birth Rate and Physical Degeneration.

Two topics are now furnishing standing subjects for discussion in the lay press and are attracting an enormous amount of attention—the declining birth rate and the physical degeneration of the working classes associated with town life. Medical authorities, church dignitaries and public men of all kinds are entering into the discussion, which is conducted largely in an alarmist spirit, many declaring that the empire is being endangered. As to the birth rate, in 1903 the London rate was 28.4 per 1,000—the lowest then recorded and 0.1 below the preceding year. Now it is announced that the birth rate for Great Britain in the second quarter of the present year was only 27.8—the lowest recorded in any second quarter since civil registration was established. In 1895 the birth rate was 30.3, and in every succeeding year a decline has been recorded; in 1904 it was 27.9. Among the causes assigned are the "no family" and the "limited family" creeds, which the desire for a higher standard of life has engendered, and the diseases of women. The selfishness and desire for luxury and pleasure of the people are attacked by the critics, but they do not grasp the fact that the declining birth rate is a phenomenon of advancing civilization and an inevitable one. As to the physical degeneration of the population, the obvious conclusion from reliable data is that there is no such thing. Hence, the topic furnishes a splendid subject for discussion for all sorts of theorists, on the general principle which holds in medicine that the less there is actually known about anything the more can be said on it. No doubt town life, especially in the slums, is attended with certain injurious physical tendencies, but, on the other hand, the people are better fed to-day than ever before and the hygienic conditions of towns is much improved. Some time ago, as reported in THE JOURNAL, the director general of the army medical service showed by figures that the classes which furnish our armies with recruits are individually broader, heavier, taller and better constituted than ten years ago.

Correction in Footnote to Dr. Tiffany's Article.—Through an error by the printer, a small portion of the copies printed of THE JOURNAL, September 30, contained, on page 937, a footnote stating that the article on "Differential Diagnosis of Intraorbital Tumors," by Dr. Flavel B. Tiffany, Kansas City, was read in the Section on Ophthalmology of the American Medical Association at the Portland session, July, 1905. The article was prepared for that session, but the author was prevented from being present to read it.

V 4
190

Pharmacology

"Scientific Work Misrepresented and Commercialized."

PORTO RICO ANEMIA COMMISSION.

AIBONITO, P. R., Sept. 18, 1905.

To the Editor:—It has come to our notice that the report of this commission, published Dec. 1, 1904, is being used by the manufacturers of Gude's pepto-mangan to advertise their preparation of iron. As this advertisement puts us in a very unenviable and erroneous light before the medical profession generally, will you be kind enough to publish the following statement?

The advertisement in question purports to be a review of this report and, having attracted attention, proceeds by erroneous deductions and half-quotations in such a manner that one might believe that the commission indorsed their preparation of iron as the best hematic in the treatment of the anemia of uncinariasis.

As a matter of fact, the report (page 119) clearly states that we found the carbonate of iron to give the best results. Our report, on account of the limited edition, has never reached the majority of our professional brethren, and for this reason we quote the portion referred to:

"It will be noticed that slight cases readily recover without iron, and here the difference in the tables is more marked, while there is less difference among the marked cases in proportion to their number. In other words, the more resistant cases of all grades received iron, but even then did not generally recover as rapidly as those less rebellious without, for while ferruginous preparations seem to act readily in some instances, still, in the majority, its effect was not marked. The rapidity of cure is due, apparently, more to the personal equation of the patient and the rapidity with which the parasites are expelled, than to the amount of reconstructive treatment. Thus it is quite difficult accurately to judge the comparative value of different iron preparations, yet it was noticed, even by some patients, that Blaud's pills gave more rapid results."

We do not believe that a perusal of the histories of the eighteen cases which the advertisement quotes demonstrates the superiority of pepto-mangan (Gude), as these patients recovered more slowly than others of the same type who took Blaud's pills or Vallet's mass. In fact, on account of this slow recovery the carbonate of iron was substituted for pepto-mangan in five of the eighteen cases (Cases 8, 9, 10, 13 and 15). We ceased to use pepto-mangan and gave none to the later cases.

To support our statement we invite attention to the following figures taken from those given in the very report which the M. J. Breitenbach Co. cite as proving the superiority of their preparation:

There are sixty-one cases reported in full with complete blood records and clinical histories. In eighteen of them pepto-mangan was used save toward the termination of five of them, when Blaud's pills were substituted. In eleven cases Vallet's mass was used, supplemented by Blaud's pills. In twenty-nine cases Blaud's pills were used exclusively. Three cases have no bearing on the subject.

Reconstructive treatment.	Pepto-mangan (Gude).	Blaud's pills.	Vallet's mass.
Average hemoglobin before treatment, per cent.	20.7	26.5	18.1
Average number days under treatment	80.7	47.9	69.8
Average gain in hemoglobin during treatment, per cent.	62.3	66.8	66.6

But to bring out the difference between these drugs more vividly eighteen pairs of cases of like type have been tabulated, whose initial hemoglobins absolutely or nearly correspond. One of each pair was treated by Blaud's pills, the other by pepto-mangan. The demonstration is all the more potent in that both drugs were used in their true rôle as blood regenerators, in conjunction with thymol administered to both alike.

Case No.	Form of iron used.	Hemoglobin before treatment.	Days under treatment.	Total gain hemoglobin.
1.	Pepto-mangan ...	33	100	66
54.	Blaud's pills....	33	56	70
3.	Pepto-mangan ...	25	71	78
52.	Blaud's pills....	25	36	75
4.	Pepto-mangan	28	97	72
50.	Blaud's pills....	27	48	73
6.	Pepto-mangan	22	101	63
25.	Blaud's pills....	22	42	75
7.	Pepto-mangan	10	81	89
28.	Blaud's pills....	11	42	89
8.	Pepto-mangan	34	101	44
46.	Blaud's pills....	35	32	69
9.	Pepto-mangan	20	99	80
42.	Blaud's pills....	20	50	81
10.	Pepto-mangan	20	97	84
51.	Blaud's pills....	20	60	63
11.	Pepto-mangan	32	96	68
47.	Blaud's pills....	32	36	70
12.	Pepto-mangan	27	89	9
53.	Blaud's pills....	25	60	84
13.	Pepto-mangan	14	94	85
23.	Blaud's pills....	14	60	86
14.	Pepto-mangan	19	88	80
45.	Blaud's pills....	16	57	48
16.	Pepto-mangan	11	94	89
22.	Blaud's pills....	12	71	88
16.	Pepto-mangan	20	102	70
60.	Blaud's pills....	19	28	71
17.	Pepto-mangan	9	88	6
21.	Blaud's pills....	13	71	80
18.	Pepto-mangan	18	98	82
59.	Blaud's pills....	19	55	87
19.	Pepto-mangan	28	49	76
42.	Blaud's pills....	21	57	8
23.	Pepto-mangan	9	74	83
20.	Blaud's pills....	22	37	49

That is to say, of eighteen pairs of almost identical cases, the initial average of hemoglobin percentage in the cases treated by Blaud's pills was 21.9; in those treated by pepto-mangan (Gude), 20.7; the average number of days under treatment was 48.7 in the cases treated by Blaud's pills; in those treated by pepto-mangan (Gude), 80.7; the average gain in hemoglobin under Blaud's pills was 66.1 per cent; under pepto-mangan (Gude), 62.3 per cent.

We tried to use a variety of iron preparations and were offered the pepto-manganates made by this company. We had no idea that this preparation differed essentially from any other pepto-manganate of iron, and it certainly may not, but had we considered the pepto-manganates of superior value as blood regenerators we would have said so. As it is, we have said the contrary and wrote this company to that effect at the time we became convinced of it.

This commission does not wish to be understood to consider the use of reconstructive treatment as a necessity in the anemia of uncinariasis. Such an idea is all the more absurd in view of the fact that in the 12,000 cases treated under its direction since June 1, 1905, comparatively little reconstructive treatment has been used, many cases receiving none at all. As our experience with this disease widens, our opinion is strengthened that anthelmintic treatment is not only curative, but promptly so, in the vast majority of cases, iron or no iron. Thanking you in advance for the use of your columns,

We are, very truly yours,

BAILEY K. ASHFORD,
W. W. KING,
PEDRO GUTIERREZ YGARAVIDEZ,
Members of the Commission.

The following resolutions were adopted at the annual session of the Washington County (Iowa) Medical Society, September 19:

Resolved, That this society express its hearty appreciation and commendation to the Council on Pharmacy and Chemistry and to the Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for the stand they have taken and for the valuable work already done in the analysis of proprietary remedies and the publication of the same in THE JOURNAL. We promise our support and co-operation to the Association toward the attainment of the desired results.

CLYDE A. BOICE, M.D., Secretary.

No False Labels.

But in my opinion the most objectionable form of food adulteration is that which seeks to deceive the consumer. This deception is practiced for the sole purpose of getting a higher price for a food product than could be had if the true composition of the substance were known. Mixtures of sweets and flavoring matters are sold as maple syrup, glucose as honey, oleomargarin as butter. Orange marmalade, straw-

berry jam, etc., often contain little or none of the material whose name they bear. Wines are misbranded both as to their true character and the place where they were made. Whisky is sometimes a mixture of neutral alcohol, essences and coloring matters, with sometimes a bit of straight whisky for conscience sake. Jams, jellies and marmalades contain glucose, coloring matters and antiseptics, and preserved meats and sausages are colored artificially and preserved with borax.

This whole system of deception strikes at the very heart of honest trade. It is one of the strange things of commercial ethics that men are found who support such a system and yet would be quick to resent any imputation on their honesty. What should the public require?

1. Good laws, state and national, forbidding the addition of deleterious substances to foods.

2. Requiring each label to convey to the consumer a correct and complete list of all the substances not natural to the food in question which the package contains.

In other words: NO FALSE LABELS!—H. W. Wiley, M.D., in *Collier's Weekly*, September 30.

"Try Our Remedy, Doctor, Please."

This is always the final argument of the promotors of new drugs and serums. "We do not expect you to accept the claims made for the serum," writes one firm in urging a trial. The argument is a convincing one to many physicians who do "try" the remedy on the agent's say-so, especially if they receive, as is commonly the case, free samples. There is such an apparent show of fairness in the request.

Yet the reflecting physician must see that he does himself and his patients an injustice to "try" all the remedies he is requested to "try" by the manufacturers thereof. Certainly is unknown to him, or remedies made by houses unknown are unknown to him, or remedies made by houses unknown to him; and especially is this true of serum remedies.

A serum made against syphilis which the makers claim "absolutely eradicates the syphilitic infection" is now being extensively advertised and the physician is asked to "try" it, although he has no means of knowing what it contains save the say-so of those financially interested in its sale. Is it not worse than folly for the physician to "try" such a remedy made by a laboratory unknown to him? He might as well "try" a remedy handed to him by a barker at a county fair because assured by him in a loud voice that it absolutely eradicates syphilis and that there will be no recurrence of symptoms.

The physician should not "try" remedies merely because he is asked to do so, or to oblige a plausible agent, but only when they come to him well introduced by firms and physicians well known to him for their intelligence *and honesty*. It may be said that he should never try a new remedy brought to his attention by an unknown firm and of which he has no knowledge save that given him by the interested firm. As a matter of fact it is better for him to accept no free samples from traveling agents. He should be prepared to buy what remedies he desires to try. This plan at once places him on an independent footing and reduces to a minimum his temptations to "try" a new remedy simply because it costs him nothing.

The physician may be perfectly certain of one thing, viz., that chemical firms furnish free samples because and only because it is to their interest to do so; and very often the object of these firms is to use the physician as a medium or catspaw to enable them to sell their remedies afterward directly to the public. The physician who good naturedly "tries" the remedy which the agent of an unknown firm leaves never knows when he is acting such a regrettable part.

It behooves us all to examine well into the credentials of any remedy we propose to "try" if we are to do justice to our patients and to retain our own self-respect.

Pittsburg, Pa. THEODORE DILLER, M.D.

Dr. E. E. Glover, Terre Haute, Ind., writes that he has the page from the *Ladies' Home Journal* for September, entitled "Pictures that Tell Their Own Stories," neatly framed and hung in his office. He says that it "excites a surprising amount of interest and comment."

Correspondence

The Mosquito Theory in Text-Books.

WASHINGTON, D. C., Sept. 29, 1905.

To the Editor:—The proof that yellow fever is transmitted by the bite of infected mosquitoes of a particular variety was so promptly accepted by the medical profession of America and Europe, and time has so amply demonstrated the truth and completeness of Walter Reed's conclusions that it seems almost incredible that American text-books for students and practitioners of medicine in the present year should teach the theory of Sanarelli and either omit or fail to make clear what is one of the greatest medical discoveries of the age.

From the splendid "Medical Diagnosis" of Musser, last edition, Lea Brothers & Co., I quote:

"Yellow Fever.—The infection which we are about to consider is the latest of the epidemic and contagious disorders for which a definite causal micro-organism has been discovered. . . . The specific micro-organism is *B. icteroides* described by Sanarelli."

A brief description of Sanarelli's germ, and of the serum diagnosis of yellow fever is given, but not a word about the transmission of disease by mosquitoes, or the work of Reed and his associates.

The entire discussion of yellow fever is taken without change from a previous edition of the work, and we have here evidently an unintentional failure to bring a few paragraphs of this most excellent book up to date in the new edition.

In "A Text-Book on the Practice of Medicine," etc., by Dr. James Magoffin French, William Wood & Co., 1905, the author, in describing yellow fever, states: "The *Bacillus icteroides* of Sanarelli is now generally accepted as the cause," but he appears to believe that the said bacillus is carried by *Stegomyia fasciata!!!*

I write this in no spirit of criticism, but because I believe that the future safety of our southern states from this terrible disease can only be obtained by a universal acceptance by the people of the fact of mosquito transmission of the malady, and, therefore, that a statement of another and an exploded theory of causation in an important text-book of medicine is a serious blow to popular education in a matter of very great moment to our country.

WALTER D. MCCAW,
Major-Surgeon, U. S. Army.

Warning—Fraudulent Magazine Agent.

NIAGARA FALLS, N. Y., Sept. 28, 1905.

To the Editor:—I would like to warn physicians through THE JOURNAL of a man by the name of Charles Croft, who pretends to be an agent for the World's Clubbing and Subscription Co., of New York City. Mr. Croft's method is to offer several magazines at an exceedingly low price so that nearly every man that he approached in this city bought magazines of him. He sold me *McClure's*, the *Cosmopolitan*, *Everybody's* and the *Black Cat* for $2.00 a year. Mr. Croft is a man about 26 years of age, would weigh about 165 pounds, smooth face, light brown hair, is well dressed and has a very pleasing manner. I have communicated with the publishers of the magazines which he sold me and they inform me that no subscription has been received and that Mr. Croft is a swindler.

F. N. C. JERAULD.

Embryo Specimens Wanted.

COLUMBIA, Mo., Sept. 26, 1905.

To the Editor:—I am making a collection of human embryos, which are preserved permanently for research work in human embryology. Any specimens (especially of the earlier stages), which your readers may be able to contribute would be thankfully received. The best general preservative is 10 per cent. formalin or the strongest alcohol.

C. M. JACKSON, M.D., Prof. Anatomy, Univ. of Missouri.

The Arkansas Board of Health.

LITTLE ROCK, ARK., Sept. 18, 1905.

To the Editor:—That part of the editorial in THE JOURNAL of September 16 on yellow fever which referred to the situation

in Arkansas has suggested that a few facts be submitted concerning the recent state board of health episode.

For the last ten or fifteen years the Arkansas State Board of Health has had only a nominal existence, and has existed by law, but not by any material support from the state. Physicians accepting appointments thereon have doné so as a courtesy to the governor making the appointment and as an acknowledgment of the honor which he thus sought to bestow. The hope, too, was indulged in by those interested that by keeping up the semblance of a state board of health the matter of obtaining proper recognition on the part of the legislature would be facilitated, and the board which only existed in name would then become one in reality and effectiveness. On July 31, 1905, the board met at the mayor's office in Little Rock. At this meeting the board consisted of the following members: Drs. G. M. D. Cantrell, president, R. B. Christian, secretary, W. H. Miller and W. B. Hughes, all of Little Rock, Drs. W. W. Jackson of Jonesboro, and J. R. Lynn of Hazen. The four members from Little Rock, constituting a quorum, were present.

At this meeting a state quarantine was declared against New Orleans and all other infected points. This was done with the understanding that all the rules and regulations of the quarantine thus announced would be strictly and rigidly enforced on the part of the governor of the state by the employment for this purpose of the Arkansas guard, or militia. The board received positive assurance through his private secretary, who was present, that this would be done. A conservative, but effective, quarantine along the southern and eastern borders of the state was thus instituted and successfully operated for nearly a month.

On August 27, at a conference in the governor's office, there being present the governor, the commander of the state guard and the president of the state board of health, the rulings and all authority of the state board were virtually set aside and the governor seemed to arrogate to himself entire control of the quarantine situation.

On August 28 the state board of health met and unanimously adopted, and ordered to be dispatched to the governor immediately, the following resignations of the four members present, constituting a quorum of the board:

LITTLE ROCK, ARK., AUG. 28, 1905.

Gov. Jeff Davis.

Dear Sir:

We, the undersigned members, constituting a quorum of the Arkansas State Board of Health, hereby tender to you our resignation and request your acceptance of same, to take effect at once.

This action is taken because we do not desire longer to occupy positions of responsibility and at the same time to be interfered with and shorn of our authority as the state board of health. We instituted and, with the aid of the state militia, have successfully conducted until recently an effective and reasonable state quarantine. Not a case of yellow fever has made its appearance in Arkansas. We have earnestly advised the raising of all local quarantines within the state and the reliance altogether on the state quarantine, so that the business and social interests of the state might be as little interfered with as possible and the use of health certificates thus be largely obviated. We do not wish longer to be responsible for a quarantine we can not control, and one which, at first both effective and conservative, is now fast becoming a wild frenzied shotgun affair.

G. M. D. CANTRELL, *President.*
R. B. CHRISTIAN, *Secretary.*
W. H. MILLER,
W. B. HUGHES.

A day or two after this action was taken Dr. W. W. Jackson of Jonesboro sent to the governor his resignation. Dr. J. R. Lynn of Hazen, at the request of the governor, it is supposed, had resigned several days before. The resignations thus sent in were promptly accepted, and the following physicians were immediately appointed as members to constitute a new board of health for Arkansas and all accepted without delay: Drs. Joseph P. Runyan, president, Little Rock; Joseph P. Shephard, secretary, Little Rock; John R. Dibrell, Little Rock; Robert A. Hilton, Eldorado; Ben L. Harrison, Jonesboro, and Eugene H. Abbington, Beebe.

R. B. CHRISTIAN.

Marriages

T. ROSS PAYNE, M.D., Corbett, Md., to Miss Gent.

LOUIS R. PADGETT, M.D., to Miss Mary Ring, at St. Louis, September 6.

MORTIMER FRANK, M.D., to Miss Dosie Katz, both of Chicago, October 4.

CHARLES F. BUCKLEY, M.D., to Miss Alice H. Osborne, both of Brooklyn, October 3.

LOUIS H. FREDERICH, M.D., Chicago, to Miss Rose Rudolph of Milwaukee, October 5.

WILLIAM H. FREEBURGER, M.D., to Miss Clara E. Pubbs, at Baltimore, September 19.

JOHN E. JANES, M.D., Pasadena, Cal., to Miss Mary Marvin of Seattle, Wash., September 5.

WILLIAM JOHNSON WEST, M.D., to Miss Marian Cottrell, both of Richmond, Va., October 3.

OSWALD H. MAGANEY, M.D., Papillon, Neb., to Miss Malinda Leist of Lincoln, Neb., September 26.

LEWIS W. BREMERMAN, M.D., New York City, to Miss Helen Tope of Oak Park, Ill., September 28.

WILLIAM F. BERRY, M.D., Glenwood, Mich., to Miss Harriet Alling of Evanston, Ill., September 16.

JOHN REYNOLDS PATTEN, M.D., to Miss Augusta Eugenia Soule, both of Fairfield, Vt., October 3.

JOHN BATTLE CARTER, M.D., Milledgeville, Ga., to Miss Nellie Ferris of Augusta, Ga., September 21.

CLARENCE S. LATHAM, M.D., Hilliards, Ohio, to Miss Marie De Bolt of Columbus, Ohio, August 29.

J. A. CHRISTENSON, M.D., Manistee, Mich., to Miss Selma Rundquist of Ophiem, Ill., September 14.

DOUGLAS SCHOOLFIELD, M.D., Bellevue, Ky., to Mrs. Clara Belle Gaff of Dayton, Ky., September 20.

JOHN E. DORMAN, M.D., Fayette, Iowa, to Miss Aurilla Cassidy of Raymond, Iowa, September 19.

WILLIAM WORDSWORTH RIHA, M.D., New York City, to Miss Emily L. Yurzik of Baltimore, September 30.

HARMAN T. HARSSIG, M.D., to Miss Essie Graham, both of Paducah, Ky., at Metropolis, Ill., September 19.

EDMUND R. LAPE, M.D., Benson, Vt., to Miss Agnes Evangeline Peck of Fair Haven, Vt., September 20.

FREDERICK PHILIP SCHULTZE, M.D., Marengo, Iowa, to Miss Mary Canon of Fremont, Iowa, September 27.

R. B. COCHRANE, M.D., to Mrs. Lillian Griffith, both of Columbus, Ohio, in Covington, Ky., September 11.

LAKE LOUIS STARKEY, M.D., West Greene, Ala., to Miss Mary Bosworth of Birmingham, Ala., October 1.

WILLIAM C. PUMPELLY, M.D., Macon, Ga., to Miss Anne Altha Singleton of Fort Valley, Ga., September 14.

CASSIUS M. CLAY BUCHANAN, M.D., Easton, Ill., to Miss Marguerite M. Saffer of Mason City, Ill., August 31.

WILLIAM WHITNEY KITCHEN, M.D., Buffalo, N. Y., to Miss Mabel Claire Money of Washington, D. C., October 4.

WILLIAM J. BENNER, M.D., Willow Lake, N. D., to Miss Etta Peeler of St. Louis, at Anna, Ill., September 21.

MOULTON KISSINGER JOHNSON, M.D., surgeon U. S. Navy, to Miss Schroeder, at Jamestown, R. I., September 16.

JULIUS MALTBY DUTTON, M.D., Tewkesbury, Mass., to Miss Charlotte Helena Coye of Livonia, N. Y., September 12.

CLINTON BEECHAM KNAPP, M.D., New York City, to Miss Mary A. Atwater, at Southington, Conn., September 20.

WILLIAM FOSTER HUFF, M.D., Los Angeles, Cal., to Miss Fannie Elizabeth Shallish of Riverside, Cal., September 28.

FREDERICK N. HENDERSON, M.D., to Miss Nellie F. Rayer, both of Philadelphia, at Mount Carmel, Pa., September 18.

FREDERICK WILLIAM HARVEY, M.D., Montreal, P. Q., to Miss Helen Margaret Ewing Riddel of Newark, N. J., at Newton, N. J.

CONRAD BELL, M.D., Waltham, Mass., to Miss Elizabeth Prentiss Dudley of North Cambridge, Mass., September 21.

ALLEN D. MCLEAN, M.D., passed assistant surgeon United States Navy, to Miss Sarah Moore of Detroit, Mich., October 2.

JOSEPH ARTHUR MCCLINTOCK, M.D., New York City, to Miss Joseph Gilfelter of Wyoming, Pa., in New York City, September 19.

ROBERT KNIGHT, M.D., Seneca Falls, N. Y., to Miss Clara Louise Carpenter of Greece, N. Y., at Rochester, N. Y., September 20.

FRANCIS MERTON MUNSON, M.D., passed assistant surgeon United States Navy, to Miss Katherine Glass, at San Francisco, October 3.

ARCHIBALD WILLIAM TAVES, M.D., to Miss Isabel Bryden, both of New York City, in the Royal Chapel of the Tower of London, September 21.

Deaths

James Read Chadwick, M.D. Harvard University Medical School, Boston, 1871, a prominent obstetrician and gynecologist of Boston; a founder and fellow of the American Gynecological Society, secretary from 1876 to 1882, and president in 1897; instructor in gynecology Harvard Medical School from 1873 to 1880, and from 1883 to 1887; physician to outpatient gynecological department of the Boston City Hospital from 1875 to 1882; president of the Harvard Medical Alumni Association from 1890 to 1893; vice-president of the Massachusetts Crematory Society since 1894; founder and librarian of the Boston Medical Library since 1875; a frequent contributor to gynecologic literature and for several years editor of the Transactions of the American Gynecological Society; corresponding fellow of the London Obstetrical Society from 1876 to 1900 and honorary fellow since 1900; honorary member of the Detroit Academy of Medicine since 1876, and of the Medical and Chirurgical Faculty of Maryland since 1896, was found dead just outside his summer home at Chocorua, N. H., September 24, aged 60. It is supposed that he became ill in the night and went out on the roof of the piazza to obtain fresh air, fainted and fell.

Josiah Hale, M.D. University of Louisville (Ky.) Medical Department, 1856, the oldest practitioner of Daviess County, Ky., delegates in 1876 and 1882 to the International Medical Congress; formerly a member of the American Medical Association, a member of the Tri-state Medical Society and of the Owensboro Medical Society, died at his home in Owensboro, September 14, after an invalidism of one year, from senile debility, aged 76. At a special meeting of the Owensboro Medical Society, September 14, a committee was appointed to draft resolutions regarding the death of Dr. Hale.

Arthur Weir Johnstone, M.D. New York University, New York City, 1876, of Cincinnati, a fellow of the American Gynecological Society; member of the Kentucky State Medical Society, Ohio State Medical Society, Cincinnati Academy of Medicine, Cincinnati Obstetrical Society and British Gynecological Society, prominent as an abdominal surgeon, died at his private hospital, Walnut Halls, Cincinnati, September 28, two days after an operation for appendicitis, aged 52.

Robert Brown Hammer, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1881, of Greensburg, Pa., coroner of Westmoreland County in 1884 and 1887; for several years state quarantine officer and president of the local board of health, died at the East End Hospital, Pittsburg, September 17, from septic peritonitis, one day after an operation for intestinal obstruction, aged 46. He had been ill for four years with disease of the intestines and had had several operations performed.

Peter J. Kirschner, M.D. Bellevue Hospital Medical College, New York City, 1879, physician of Buchanan County, Mo., 1880-1881 and 1889-1891; coroner of Buchanan County from 1882 to 1886; mayor of St. Joseph in 1898; president of the board of managers of State Hospital No. 2, St. Joseph, from 1889 to 1892, died at his home, September 22, from a nervous disease from which he had suffered for three years, aged 52.

Louis E. Rasmore, M.D. College of Physicians and Surgeons in the City of New York, 1884; a member of the Orange County (N. Y.) Medical Society; for eight years physician at the Newburgh city jail, and for three years surgeon to St. Luke's Hospital, died at the home of his mother in Newburgh, September 19, from pulmonary tuberculosis, after an illness of four years, aged 46.

Edward F. Galligan, M.D. Harvard University Medical School, Boston, 1881, a member of the American Medical Association, the Taunton (Mass.) Physicians' Club, and the Clover Club of Boston; city physician of Taunton in 1894, a member of the board of pension examiners for the district, died at his home in Taunton, September 25, after an illness of two years, aged 48.

John L. Long, M.D. University of Louisville Medical Department, 1878, formerly assistant physician at the Eastern Kentucky Asylum for the Insane, Lexington, and afterward superintendent of the Institution for the Education of Feebleminded Children, Frankfort, died from heart disease at his home in Normandy, Ky., after an illness of four days, September 27, aged 50.

Harry D. Hull, M.D. Bellevue Hospital Medical College, New York City, 1877; for three years city physician of Adrian, Mich.; for several years a member of the board of pension examiners and surgeon of the Wabash Railroad, died at his home, September 24, from locomotor ataxia, after an illness of several years, aged 51.

James Laws, M.D. Jefferson Medical College, Philadelphia, 1834 ;surgeon United States Navy during the Civil War; surgeon on one of Dr. Kane's Arctic relief expeditions; examining surgeon in the pension office, Washington, died at his home i nthat city September 11, after an illness of several months, aged 77.

George Burritt Nichols, M.D. Long Island College Hospital, Brooklyn, 1871, the oldest and best known practitioner in the San Luis Obispo County, Cal., and one time mayor of San Luis Obispo and coroner of the county for seventeen years, died at his home September 21 from cancer of the ear and throat, aged 65.

William Patterson Hereford, M.D. University of Georgetown (D. C.) Medical Department, a highly respected practitioner of Prince George County, Va., the last survivor of the Seminole War, and a veteran of the Mexican and Civil Wars, died at his home near Wellington, Va., September 3, aged 89.

James Harrison Moore, M.D. Transylvania University Medical Department, Lexington, Ky., 1841, of Mercer County, Ky., representative from that county in the constitutional convention, died at the home of his son in Harrodsburg, Ky., September 16, after a protracted illness, aged 85.

John H. Sloane, M.D. Detroit (Mich.) College of Medicine, 1895, a promising young physician of Detroit, ruined by indulgence in alcoholics and morphin, died in an ambulance while being taken to St. Mary's Hospital, Detroit, September 26, aged about 38.

J. C. Gilbert, M.D. Barnes Medical College, St. Louis, 1899, an honor graduate of that institution; a member of the American Medical Association and of the Rockwall County (Texas) Medical Society, died at his home in Commerce, Texas, May 20, aged 36.

John Harrison Hunter, M.D. University of Maryland School of Medicine, Baltimore, 1855, a veteran of the Mexican War, and surgeon in the Confederate service during the Civil War, died at his home in Berkeley Springs, W. Va., September 26, aged 76.

William A. McPheeters, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1855, said to have been the oldest practitioner of Natchez, Miss., died suddenly on a train near Memphis, Tenn., September 27.

Thomas S. McKenna, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1890, of Manning, Iowa, died at St. Anthony's Hospital, Carroll, Iowa, September 22, two hours after an operation for urethral obstruction, aged 60.

John B. Hardeman, M.D. University of Nashville (Tenn.) Medical Department, 1872, died at his home in Henderson, Tenn., September 10, from jaundice, after a short illness, aged 69.

Charles W. Hamisfar, M.D. Ohio, 1871, died at his home in Fayetteville, Ark., September 10, from cancer of the intestines, aged 76.

Stephen J. Keyes, M.D. Long Island College Hospital, Brooklyn, N. Y., 1894, died at his home in Brooklyn, N. Y., September 14.

Arthur J. Harris, M.D. Chicago, 1887, died suddenly at his home in Grinnell, Iowa, September 18, from heart disease.

William J. Judd, M.D. St. Louis Medical College, 1861, died at his home in Henderson, N. C., September 7.

William W. Gray, M.D. Cincinnati, 1863, died at his home in Pasadena, Cal., September 21, aged 70.

Joseph H. Holloway, M.D. Cincinnati, 1878, died at his home in Auburn, Ind., September 12.

Book Notices

Manual of Psychiatry. By J. Rogues de Fursac, M.D. Formerly Chief of Clinic of the Medical Faculty of Paris. Authorized Translation from the French by A. J. Rosanoff, M.D., Junior Assistant Physician, L. I. State Hospital, Kings Park, N. Y. Edited by Joseph Collins, M.D., Professor of Diseases of the Mind and Nervous System in the New York Postgraduate Medical School. First Edition. Cloth. Pp. 352. Price, $2.50. New York: John Wiley & Sons. 1905.

To put all of modern psychiatry into a little manual of 350 pages is obviously impossible. A reasonably full handbook would have to be at least twice as large. But given this limit, it is hard to see how the author could have done better. He surely has the art of the text-book writer. That is, he has that peculiar sense of proportion which enables him to select from the immense mass of the known what is essential and what is important, and he knows how to present his matter simply and clearly. The defects of the work are those inherent in brevity; First, paucity of detail and lack of exceptions; second, absence of adequate discussion of unsettled questions (and in psychiatry their name is legion); third, unwarranted dogmatism of statement or want of qualification.

These defects granted, the book is a thoroughly commendable one; an excellent text-book for students and guide for practitioners who do not know a great deal and do not aspire to know a great deal of mental disease. The style is so simple and direct that the work is well adapted for the use of psychologists, lawyers, teachers and other non-medical persons who may have occasion to learn something of insanity. Even for those already well versed in psychiatry, it is far from being a barren manual. It is up to date, and contains especially good presentations of three subjects now of particular interest in the world of psychopathy: dementia præcox, Korsakoff's (or Korsakow's) psychosis and manic-depressive insanity. And this brings us to the question of classification. Presumably no review of a work on insanity is complete without a criticism of the author's classification. And, frankly, we do not agree with the author. The latter follows Kraepelin, but has chosen to do so with modifications which appear to us not always happy. However, in the text, he several times begs the question and, besides, for the practitioner the matter of classification is far from being the most important.

The book is divided into two parts: general psychiatry (120 pages) and special psychiatry (216 pages). There is an appendix containing an excellent guiding scheme for the investigation of insane patients (6 pages). Part I, embodying etiology, symptomatology, examination of patients and general therapeutics, is as good as anything we have seen on the subject. Hallucinations, delusions, amnesia, disorders of reaction, etc., are treated very briefly, but very clearly. In Part II the descriptions of disease are good. In addition to the chapters on dementia præcox, Korsakoff's psychosis and manic-depressive insanity already mentioned, that on senile dementia is particularly satisfactory. Diagnosis and prognosis receive rather scant space, and in many instances the consideration of treatment is too meagre to be useful. Throughout the second part a laudable effort is made to supplement the brevity of the text with bibliographic references, and these are well chosen and sufficiently numerous. Unfortunately for English readers, they are all French and German. It would seem to us that the editor might easily have supplied, what really should have been in the original, some references to British and American literature. In fact, we have been unable to discover any *raison d'etre* of the aforesaid editor except to cumber the title page with the inverted pyramid of his numerous titles. If he really contributed to the proper construction of this translation of a firstrate book, we should be made aware of the fact. Otherwise, many will assume that he is introduced for purely ornamental purposes.

The translation has been well done, although there is room here and there for a bit of discussion. For instance, the literal translation of the word *moral(e)* is sure to mislead some readers unacquainted with French. To say that the obstacles to the home treatment of the insane are "both material and moral" is not an exact statement. The "moral pain" of the melancholiac has no necessary relation to right and wrong. The book is well printed on good paper.

Abdominal Pain. Its Causes and Clinical Significance. By A. Ernest Maylard, M.B., B.S., London. Cloth. Pp. 324. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Co. 1905.

This is a most interesting monograph on the diagnosis of diseases within the abdomen. Pain is the chief symptom in most of these diseases and therefore has been considered in great detail by this author. The early chapters in the book are devoted to a consideration of the distribution of nerves to the organs within the abdomen and to the walls of the abdomen, and to the general causes of pain.

Pain in affections of the alimentary tract, liver, bile ducts, pancreas, urinary system, reproductive organs, spleen, aorta, etc., is treated of in succeeding chapters. The last chapters are devoted to a regional pain and will be of much assistance to the practitioner in locating the organ which gives rise to pain. The subject of differential diagnosis is fully discussed. Although pain is the chief symptom all others are considered. This book brings together in convenient form our knowledge of this subject. We cannot agree with the author that his last chapters on the performance of laparotomy are in place. He pleads that "so much has been gleaned from abdominal surgery in recent years, I did not think it would be out of place to conclude with a chapter or two on the performance of laparotomy." These chapters are not in place. However, they do not lessen the value of the book which we gladly commend to our readers.

System of Physiologic Therapeutics. Under the General Editorial Charge of S. Solis-Cohen. Vol. VII—Mechanotherapy, and Physical Education, including Massage and Exercise, by J. K. Mitchell, M.D., and Physical Education by Muscular Exercise by L. H. Gulick, M.D. Pp. 420. With 290 Illustrations. Vol. VIII—Rest, Mental Therapeutics, Suggestion, by F. X. Dercum, M.D., Ph.D. Pp. 382. Vol. XI—Serumtherapy, by J. McFarland; Organotherapy, O. T. Osborne, M.A., M.D.; Radium, Thorium and Radioactivity, by S. G. Tracy, B.Sc., M.D.; Counterirritation, External Applications, Bloodletting, F. A. Packard, M.D. An Outline of the Principles of Therapeutics, with Especial Reference to Physiologic Therapeutics by the Editor and an Index-digest of the Complete System of Eleven Volumes. Illustrated. Pp. 382. Price, $2.50 per volume. Philadelphia: P. Blakiston's Son & Co. 1905.

On the whole it must be said that this ambitious undertaking has been brought to a successful issue. The three volumes mentioned can not but prove valuable additions to the physician's library. The subjects considered are presented in an interesting and instructive manner. The editor's discussion of the principles of physiologic therapeutics is clear and thoughtful and should be read by all physicians who wish to substitute rationalism for blind empiricism in their treatment of disease. Probably the introduction of such words as toxolysin and toxolysis for antitoxin and its action on toxin must be regarded as rather ill-chosen innovations because they do not express correctly the nature and actions of antitoxin. The whole system merits wide distribution because it certainly represents a strong and successful effort to give an exposition of the very important methods of treatment, preventive and curative, now available other than drug giving.

Dietetics for Nurses. By J. Friedenwald, M.D., and J. Ruhräh, M.D. Cloth. Pp. 362. Price, $1.50 net. Philadelphia: W. B. Saunders & Co. 1905.

In this work the essential points in dietetics are given in a clear and concise way. The introductory chapters on the chemistry and physiology of digestion are well and intelligibly written. The chapters on "Various Factors in Their Bearing on Diet" and "The Feeding of Infants and Children" are very practical, the formulas for modifying milk being especially so. The diet in special diseases is reviewed in some detail and the book concludes with recipes for many appetizing dishes. The book should be of value to physicians as well as to nurses.

A Reference Handbook for Nurses. By Amanda K. Beck of Chicago. Bound in Flexible Morocco. Pp. 150. Price, $1.25 net. Philadelphia: W. B. Saunders & Co. 1905.

The notes taken by a student while in school or college may be invaluable to him but of little use to anyone else, and the same rule applies to the notes taken by a probationer or undergraduate nurse while in the hospital training school. It has been said that well trained nurses never diagnose and never prescribe, but Miss Beck's book implies that they do both. It contains a chapter on "Miscellaneous Formulæ" in

which the first formula given is for "Bemmola's mixture" "to eliminate the kidneys." We trust that Miss Beck seldom finds it necessary to eliminate these useful organs. Many of the formulas given are practical and should be helpful in preparing the various "stock solutions" of disinfectants. We thought that the onion poultice mentioned on page 47 was a thing of the past. The chapters on general nursing are good, and that on diet is perhaps the best in the book; it contains recipes for many appetizing dishes to tempt the capricious appetite of a sick or convalescent patient.

Miscellany

Lumbar Puncture in Treatment of Uremia.—Prof. G. Carrière of Lille writes to the *Archives Gen. de Méd.* of September 12 that he found lumbar puncture actually a lifesaving measure in two cases of uremia. It failed to show any benefit in four cases, but was useful in two others, and is liable to be beneficial in all cases. It acts by reducing the pressure of the cerebrospinal fluid and reducing the tendency to edema, while it removes the poisonous fluid that is irritating the cells of the cortex. He found that the cerebrospinal fluid in cases of nervous uremia was invariably hypertoxic. In some other cases the trouble was evidently due to compression, and in others to edema of the brain, all being conditions liable to benefit by lumbar puncture.

Carbolic-Acid Burn.—Commenting on the use of alcohol in burns from carbolic acid, Dr. F. P. Minton, East Toledo, Ohio, refers to the length of time which elapsed between the occurrence of the injury and the application of the alcohol in the case reported by Dr. T. J. Swisher, Rawlins, Wyo., in THE JOURNAL, Sept. 2, 1905, page 717, and reports an interesting case which came under his observation. In dressing an extensive wound of the face, after the stitches were removed, a 95 per cent. solution of carbolic acid was accidentally poured on the wound instead of peroxid of hydrogen. The mistake was discovered almost instantly, and as no alcohol was at hand, the surgeon washed off the wound with fluid extract of ergot, tincture of opium, paregoric and other preparations in his valise containing alcohol. He then applied a dressing of antiseptic cotton saturated with whisky. The results were entirely satisfactory, and the patient never knew of the accident.

"The Feminine Peril."—Lutaud has a breezy editorial in the last *Jour. de Méd. de Paris* on the way in which women are supplanting men in the business world. No law, no human force can stop the progress of this revolution, he says, which he regards as of much more moment than a possible "yellow peril." Within a few years, he remarks, the conditions of social life will have been revolutionized. The directing force will be inevitably feminine, and men, having nothing more than the superiority conferred by greater physical strength, will be utilized only in rough work requiring such strength. He adds that the female natality is increasing and the female mortality rate is diminishing, the latter due to the absence of the vices and excesses which are the prerogative of "the superior animal," man. Fifty years from now the healthy, vigorous man will find no outlet for his faculties except in the rare manual professions which require physical strength. All of which is very funny.

The First Postmortem in Montreal.—According to the *Montreal Medical Journal* there is to be found in the description of "Hakluyt's Voyages," of the travels of Jacques Cartier, the following record of the earliest reported autopsy performed in that city. It took place in Montreal, then known as Hochelaga, in the winter of 1535, when many sailors died of an epidemic disease. "That day Philip Rougement, born in Ambroise, died, being 22 yeeres olde and because the sickness was to us unknowen, our Captaine caused him to be ripped to see if by any means possible we might know what it was, and so seeke meanes to save and preserve the rest of the company. He was found to have his heart white, but rotten, and more than a quart of red water about it; his liver was indifferent faire, but his lunge black and mortified, his blood was altogither shrunke about the heart, so that when he was opened great quantitie of rotten blood issued out from about his heart; his milt (spleen, Ed.) toward the back was somewhat perished, rough as if it had bene rubbed against a stone. Moreover, because one of his thighs was very blacke without, it was opened, but within it was whole and sound, that done as well as we could, he was buried."

Growing Youth, Health and the Nervous System.—No subject is of more importance than the mental, moral and physical training of the child and growing youth of our land. History indicates that body, mind and morals are the trinity of essentials for the welfare of individuals and nations. This being the case, and viewing facts from a utilitarian standpoint alone, it behooves physicians, parents and educators to face the matter of parenthood in its broadest aspects. The child is being overworked by present day methods of education. The rapid advances in all avenues of thought and science to-day, and the failure to remember that the human body has not changed materially the while is the basic reason for the degeneration of our methods of education and the defeat of our aims for an ideal higher growth of the race. Time has come to call a halt. Ways and means of preventing overwrought nervous systems must come if we are to lead the cause of advance of humanity. Let us work it out carefuly and at once.—*Wisconsin Medical Journal.*

Medical Education in Itlay.—Carrara of Turin contributes an interesting sketch of the conditions of medical instruction and practice in Italy to the *Deutsche med. Wochft* of June 8. He states that there are 17 state universities in Italy, with 4 colleges, 3 independent universities, 3 obstetric training schools, and other colleges, a total of 30 higher institutions of learning. Fifteen of the above universities have a medical department. All are supported by the state except the three independents, which are maintained by the community. This scattering of the funds that might support handsomely a few higher institutions among such a number of small ones is deplored by all writers. In Germany the state expenditures for its 22 universities and colleges are $5,000,000, while Italy has only $1,600,000 to distribute among its 17. The number of college-bred men to 100,000 inhabitants was, in 1891, in Germany, 48, in France 42, in Denmark 45, in Austria 55 and in Italy 51, while the proportion in Italy is constantly increasing. The number of physicians to the 100,000 inhabitants is also increasing, being 66 in 1898 and still higher now. Milan has recently founded an institute for postgraduate work in gynecology, occupation affections and communicable diseases. The state has appropriated nearly $70,000 a year for the support of this postgraduate school.

Medical Science in Turkey Under the Present Sultan.—The *Lancet* in an editorial calls attention to the little known fact that the Sultan of Turkey has done much for his subjects in a medical and hygienic way, and states that he has always been eager to let his people benefit as much as possible by the latest discoveries of science. He has established a large number of charitable institutions in his dominions, and fountains of cool well water, which are such a boon in a distinctly warm country like Turkey, have been established at the expense of his private purse. In Constantinople every district in the city has such a fountain, which supplies drinkable water free of expense. In that city, too, asylums, lazarets and hospitals of various descriptions, receiving the personal endowments of the Sultan, keep their doors open for sufferers of every nation and give them free treatment. The Sultan is said to be especially interested in sick children, and for them has established the Hamidié Hospital, a first-class institution equipped with all the requirements of modern science. All the best medical men in the country are engaged in the service of this hospital, and they are assisted by a staff of German nurses. The large leper hospital on the Asiatic side of the Bosphorus also receives the attention of the Sultan, and a place of refuge for the poor and aged and an asylum for the insane have been created and are sustained by his large contributions. Through his initiative also Constantinople possesses a large medical school with an efficient staff of professors and lecturers. The Sultan is said to take an interest in all medical congresses. Recently he has set on foot a movement to create in Constantinople an establishment for the deaf and dumb. These things, says the *Lancet*, seem to prove that the popular estimate of the Sultan of Turkey is not wholly justified.

The Medical Reprint.—There is one form of medical literature which is particularly deserving of discontinuance. There was never much that could be urged as justification for sending out thousands of reprints of an article already published and read in a reputable medical journal. Undoubtedly the one thing which has served to keep the custom alive is the fact that such reprints are supposed to be highly valuable as a means of advertising the ability or the accomplishments of the man by whom they are sent out. The reprint occupies the same position in the field of medical advertising that the hand-bill does in the more common commercial walks. If any merchant could afford to pay for the amount of space for "pure reading matter" given the usual contributor to a medical journal for his article, he would not even dream that it was necessary to follow this excellent method of advertising by the cheaper and much less effective plan of reprinting his "pure reading matter" in the form of hand-bills and distributing them to the populace. For the men who have the handling of medical literature—publishers and librarians—the reprint is useless or worse. There are but few libraries in which any serious effort is made to catalogue or systematically care for the medical reprint. In nine cases out of ten the reprint is simply a duplication of what the library already possesses in some of its periodicals—to give time and labor to the care of duplicate matter is no part of the modern way of doing things. The day of the reprint is waning and it is to be expected as well as hoped that this particular method of overloading our mails and burdening our shelves will soon cease to be fashionable.—*Western Medical Review.*

The County Medical Society.—Physicians get together little enough, and do not really know one another except through the report of friends or patients. A closer intimacy between physicians would clear away much of the malicious gossip that passes as medical news. The social side of the country physician needs stimulating. He is too apt to depend on his practice and environment for his idea of the life of a physician. Unless he is ready and willing to meet his brother practitioner in a friendly spirit, and to exercise his mental faculties in medical and non-medical topics, he soon drops into a rut, from which there is no escape. His ideas narrow until he sees nothing but a thin and wavering medical line from which he dares not deviate. This brings discontent, discouragement, and failures, and the blame is frequently placed on innocent shoulders, when it actually should be borne by the physician himself. Every county society is a medical index, and insures to a greater or a lesser degree the standing of each member. Each meeting, however trite the papers and discussions, should contain some suggestion that can be profitably carried home by the members. True, some meetings are tiresome, but the inertia is due to the mental inertia of the members of the society, hence the blame is distributed over the entire society. The presiding officer or the committee in charge of the program are usually responsible for the character of the meeting. No medical society is a success unless its officers are determined to do their part of the work. There is no excuse for a poor medical society, particularly if it has had a few "experience" meetings. The fault can be easily located, and as easily remedied. Even in the small county societies the exhibition of a specimen with a clinical report of a case will call out discussion.

Physicians are reserved, shy, or embarrassed in medical societies. They hesitate to express their views for fear of exposing their lack of knowledge or for fear of criticism. It is better to attack a subject openly rather than let some loose statement go unchallenged. It is better to attempt to talk to the point, even though the speaker has opposite views from the essayist, rather than hide one's light under the cloak of indifference. The activity, interest, and competition is what makes the large county society or state organization a success. If you feel that your brother physician is too aggressive, display some aggression yourself; if you think the American Medical Association is conducted for the benefit of a few, get into line and be one of the pushers. Push is a force that is wholesome, and it is not flagrant advertising. Be modest if you please, but show what you know. If you know but little, you will learn by the criticism of others. The man who expects to succeed does not fear competition; he makes himself heard, and his reward is commensurate with his worth. The evil of many medical societies is the "knocking" proclivities of its members. Petty jealousies have no place, and gain no rewards, in medical societies. The best men do the best work, and the grumbler admits his failure. Medical men should come together for their own good, their social advancement, mental athletics, fraternalism, comparison of views, vigorous discussion, the recital of experiences, and exhibitions of their work. A clinic or a pathologic exhibit or the record of a case is sufficient reason for the congregating of medical men. A mediocre paper containing matter of common knowledge is usually a bore, but who knows but that one man may profit by it? A medical society without life or advancement should be rejuvenated by the injection of new blood into the committee, and the new material will awaken interest in spite of the old backsliders.—*Northwestern Lancet.*

Satisfy Minimum Requirements.—The following letter of a professor of clinical medicine speaks for itself, and more truly perhaps than the author intended. He says:

> In order to sustain the excellent standing we are honored with by your board, we ask that you kindly furnish us with a copy of your latest schedules of minimum requirements for medical colleges in order that our next announcement may conform to the same.

To conform to *minimum* requirements is a modest ambition, and prevalent in all trades. In the trade of medical schooling the minimum requirements are easy enough, but their attainment is difficult for a good majority of medical schools. A few years ago the minimum requirements were easy enough to be contemptible, but that phase is passing. In another year or two the minimum requirements will be respectable, and their attainment will be for many schools impossible. Eventually it will be an honorable ambition to conform to the minimum requirements. That time indeed is coming all too swiftly, but it cannot be delayed. In medical education the improvement which has become possible through large endowments will no more falter in its advance than the earth in its orbit, and in that advance the doom of the small proprietary schools is inexorably sealed. Especially pitiable is the case of those who have misread the signs of the times and cast their lot with the purely commercial schools in an unavailing effort to slow the wheels of progress. More than one unendowed school having an honorable history, a competent faculty and a body of influential alumni, has foolishly allowed the gap ahead to widen and the gap behind to close, until they are lost in a ruck of disreputables marked for slaughter. Far different is the case of those few unendowed schools whose faculties early realized that their only salvation was to follow pace. These furnish the most inspiring spectacle in the field of medical education. It is a pity that any of them should be utterly spent in the unequal race. Some of them, and these are wise, have combined forces. This expedient is cruel, but not more cruel than the spur of necessity. Many men of weight in the medical affairs of the present generation will probably outlive the schools which launched them on honorable careers. The declining influence of some proprietary schools must be a matter of serious concern to their alumni, and an active intervention might in some instances restore such schools to enduring usefulness.—*American Medicine.*

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

FORMULA FOR BLOOD SOLVENTS.

Manchester, N. H., Sept. 18, 1905.

To the Editor:—Will you kindly send me formulas for blood solvents that will keep the blood from coagulating in the veins during the process of embalming dead bodies? X. Z.

Answer.—The injection of albumose solutions, e. g., Witte's peptone, into the veins of the living animal, prevents the coagulation of the blood; an effusion of the mouth of the officinal leech has a similar effect. Potassium oxalate when mixed with blood in a concentration of 0.1 per cent. prevents coagulation by

combining with the soluble calcium salts. It is probable that concentrated solutions of other salts, as sodium or magnesium sulphate would have a similar effect, if used in large amounts. After death has occurred, it is difficult to obtain a uniform mixture of these substances with the blood, and they can be used to prevent clotting, but not to dissolve clots already formed. It is probable that they would be most effective when used to wash the blood out of the vessels before postmortem clotting has set in.

State Boards of Registration

COMING EXAMINATIONS.

Regular Board of Medical Examiners of Georgia, The Capitol, Atlanta, October 9. Secretary, F. D. Paterson, Cuthbert.

Michigan State Board of Registration in Medicine, Capitol Building, Lansing, October 10. Secretary, B. D. Harrison, Sault Ste. Marie.

State Medical Board of the Arkansas Medical Society, Little Rock, October 10. Secretary, J. P. Runyan, Little Rock.

Board of Medical Examiners of State of Florida, Jacksonville, Oct. 10-11. Secretary J. D. Fernandez, Jacksonville.

Kansas State Board of Medical Registration and Examination, State House, Topeka, October 10-11. Secretary, G. F. Johnston, Lakin.

State Board of Medical Registration of Vermont, Y. M. C. A. Hall, Burlington, October 10-12. Secretary, W. S. Nay, Underhill.

Board of Medical Supervisors of Washington, D. C., Washington, D. C., October 12. Secretary, W. C. Woodward, Washington, D. C.

Board of Medical Examiners of State of Texas, San Antonio, October 17. Secretary, T. T. Jackson, San Antonio.

State Board of Medical Examiners of New Jersey, Trenton, October 17-18. Secretary, E. L. B. Godfrey, Camden.

State Board of Health of Illinois, The Great Northern Hotel, Chicago, October 18. Secretary, J. A. Egan, Springfield.

Louisiana State Board, New Orleans, October 20-21. Secretary, F. A. Larue, New Orleans.

State Board of Heath of Kentucky, Louisville, October 24. Secretary, J. N. McCormack, Bowling Green.

Virginia June Report.—Dr. R. S. Martin, secretary of the Medical Examining Board of Virginia, reports the written examination held in Richmond, June 20-24, 1905. The number of subjects examined in was 9; total number of questions asked, 75; percentage required to pass, 75. The total number of persons examined was 206, of whom 107 passed and 33 failed; 62 non-graduates took partial examination, 4 incomplete. Two candidates presented certificates from reciprocating boards and were granted licenses to practice, without examination. After oral examinations licenses were granted to four individuals who had been in active practice for five years or more, as is the custom of the board. No percentages were assigned. Representatives of the following colleges passed the examination:

PASSED.	Year. Grad.	Per Cent.
University College of Medicine, (1902) 75; (1903) 77; (1904) 85, 88; (1905) 75, 83; the grade of 77 was reached by four: 78, 79 and 80 by two each; 81, by seven; 82, by five; 85, by three; 84, by two.		
University of South.	(1904)	76; 75, 75
University of Virginia, (1903) 76; (1904) 83; (1905) 76, 77, 80, 84, 89; the grades of 78, 79 and 81 were reached by three each; 82 by two.		
Kentucky University	(1905)	85
Maryland Medical College	(1903), 75, 79;	(1904) 78
Johns Hopkins University	(1904)	81
University of Maryland	(1905)	78
Boston University	(1904)	75
Leonard Medical College	(1902) 75; (1904) 75, 77;	(1905) 79
College of P and S., Baltimore	(1905)	78, 80
Medical College of Virginia, (1904) 77, 83 and 7; the grade of 76 was reached by two; (1905) 76, 80, 85, 87, 89; 75, 77, 79 and 83 by three each; 81 by four.		
Howard University	(1904)	76
Baltimore Medical College	(1905)	77
University of Naples, Italy	(1899)	77
College of P. and S., New York	(1903)	89
Tennessee Medical College	(1901)	75
Kentucky School of Medicine	(1904)	75
Memphis Hosp. Med. Coll.	(1904)	75
University of Pennsylvania	(1903) 90;	(1905) 84

North Dakota July Report.—Dr. H. M. Wheeler, secretary of the North Dakota State Board of Medical Examiners, reports the written examination held at Grand Forks, July 5-7, 1905. The number of subjects examined in was 14; percentage required to pass, 75. The total number of individuals examined was 30, of whom 29 passed and 1 failed. The following colleges were represented:

PASSED.	Year. Grad.	Per Cent.
University of Minnesota	(1905) 92, 82, 86, 78;	(1902) 82, 87
University of Michigan	(1903), 88;	(1905) 86
College of P. and S. Milwaukee*		78
Keokuk Med. Coll.	(1905)	80
University of Toronto	(1905)	76, 96
College of P. and S., Chicago (1905) 91;	(1903) 76;	(1902) 75
Northwestern University	(1904)	78, 80
Hamline University	(1905) 81,	79, 85
Johns Hopkins University	(1905),	85
University of Winnipeg	(1903)	87
Jenner Med. Coll.	(1904)	75
University of Pennsylvania	(1894)	80
McGill University	(1903)	82, 79
Rush Med. Coll.	(1897)	84
Laval University	(1902)	76
Washington University	(1905)	89

FAILED.

Barnes Med. Coll.	(1905)	45

*This candidate took the examination under the old law, which did not require a diploma.

Tennessee April Report.—Dr. T. J. Happel, secretary of the State Board of Medical Examiners of Tennessee, reports the written examinations at Memphis, Nashville and Knoxville, April 5-6, 1905. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of applicants examined was 121, of whom 86 passed and 35 failed. Representatives of the following colleges passed:

PASSED.	Year. Grad.	Per Cent.
Memphis Hosp. Med. Coll., (1895) 75; (1904) 82, 83; (1905) 76, 80, 82, 93.5.		
Birmingham Med. Coll., Alabama	(1899) 94; (1904)	85.5
University of Virginia	(1900) 80; (1901)	90
College of P. & S., St. Louis	(1903)	80.5
Louisville Med. Coll.	(1901) 78; (1902)	80
Kentucky School of Medicine, (1894) 75; (1897) 75; (1904)		90.5
University of Baltimore	(1893)	85
University of Maryland	(1899)	91
Meharry Med. Coll., Nashville, (1894) 75; (1904) 85; (1905) 80, 81.5.		
Vanderbilt University, (1877) 75; (1883) 75; (1905) 81.5, 85, 86, 86.25, 87, 92.		
Columbian Med. Coll., Washington, D. C.	(1904)	80
Chattanooga Med. Coll. (1892) 75; (1902) 75; (1903) 76; (1905) 75, 75, 81, 90.6.		
Baltimore Med. Coll.	(1904)	78
University of the South	(1904)	79.25
Atlanta Med. Coll.	(1902) 75; (1903)	79
Northwestern University	(1904)	87.5
Jefferson Med. Coll.	(1904)	92
Hosp. Coll. of Med., Louisville	(1904)	75
Tennessee Med. Coll., (1904) 78; (1905) 72.25, 75, 75, 75.7, 76.25, 77, 78.1, 78.6, 79.1, 79.75.		
University College of Medicine	(1903)	79.5
University of Louisville	(1904)	78.25, 86.5
University of Nashville, (1898) 73.1; (1905) 78.75, 80.6, 81.1, 83.5, 83.5, 84, 85.3, 86.3, 86.75, 88, 88.3, 90, 94.3.		
Pulte Med. Coll.	(1900)	75
University of Pennsylvania	(1903)	88
University of Tennessee, (1904) 86; (1905) 75.3, 76.5, 80.1, 80.25 83, 87.8.		
Georgia Coll. Eel. Med. and Surg., Atlanta	(1888)	75
Med. Coll of Indiana	(1901)	79.6

Illinois July Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, July 19-21, 1905. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 119, of whom 111 passed, 7 failed and 1 took an incomplete examination. Representatives of the following colleges passed:

PASSED.	Year. Grad.	Per Cent.
American Coll. of Med. and Surgery, Chicago (1904) 82;	(1905)	80
Baltimore Med. Coll.	(1903)	80
Bennett Med. Coll., Chicago	(1905)	84, 86
Cleveland Homeo. Med. Coll.	(1877) 79; (1897)	85
College of Med. and Surg., Chicago	(1905)	85
University of Southern California	(1905)	85
College of P. and S., Baltimore	(1905)	84
College of P. and S., Chicago (1897) 91; (1904) 86; (1905) 79, 82, 83, 84, 84, 87, 87, 88, 89, 91.		
College of P. and S. St. Louis	(1905)	75
Colorado School of Medicine	(1895)	88
Dearborn Med. Coll. Chicago (1905). The grade of 79 was reached by one, 78, by two; 81, by two; 82, by four; 83, by three; 84, by four; 85, by one; 86, by two; 87, by two and 89 by one.		
Eclectic Med. Inst., Cincinnati	(1905)	78
Harvey Med. Coll., Chicago, (1905) 75, 75, 77, 79, 82, 83, 83, 85, 85, 88, 90.		
Hahnemann Med. Coll., Chicago	(1905)	79, 81
Herling Med. Coll., Chicago	(1904)	79
Illinois Med. Coll.	(1905) 82,	86, 86
Jefferson Med. Coll., Philadelphia	(1905)	84, 89
Jenner Med. Coll., Chicago	(1904) 83;	(1905) 78, 82
Kentucky School of Med.	(1905)	82
Louisville Med. Coll.	(1905)	82
Marion-Sims-Beaumont Med. Coll.	(1905)	77, 79
Meharry Med. Coll., Nashville	(1903)	83
University of Kentucky	(1905)	88
McGill University	(1904)	91
University of Louisville	(1905)	85
University of Michigan	(1904)	85
Willamette University	(1899)	77
National Med. Coll., Chicago	(1903) 76;	(1905) 83
Northwestern University, Chicago	(1904) 86;	(1905) 79, 81, 81, 83, 84, 84, 84, 86, 88, 89, 89, 91.
Rush Med. Coll., (1903) 82, 87;	(1904) 82, 88, 91;	(1905) the grades of 84, 85, 87 and 89 were reached by one each; 88 was reached by four.
University Med. Coll. Kansas City	(1895)	82
Western Penn. Med. Coll., Pittsburg	(1905) 85,	87, 89

West Virginia July Report.—Dr. H. A. Barbee, secretary of the State Board of Health of West Virginia, reports the oral and written examination held at Charleston, July 18-20, 1905. The number of subjects examined in was 14; total number of questions asked, 180; percentage required to pass, 75. The total number of candidates examined was 106, of whom 57 passed, including two undergraduates, and 49 failed. Representatives of the following colleges passed:

College.	PASSED. Year. Grad.	Per Cent.
Maryland Med. Coll	(1905) 76, 77, 78, 80, 80, 82, 84, 85, 85, 88, 90.	
Ohio Med. University	(1905)	88, 89
University of Maryland	(1904) 86; (1905)	85, 89
Barnes Med. Coll.	(1903)	84
Kentucky University	(1905)	89
Medical College of Ohio	(1904)	79
Hosp. Coll. of Medicine	(1905)	80
Baltimore Med. Coll.	(1906) 75; (1905)	82, 83
Kentucky School of Medicine	(1899) 75; (1905) 75,	84, 86
University Med. Coll., Missouri	(1904)	75
Cornell University, New York	(1904)	90
University of Louisville	(1905)	76, 83
University of Virginia	(1899) 83; (1905) 83, 83, 84,	86, 92
Howard University	(1904)	77, 81
University College of Medicine,	(1901) 85; (1904) 86; (1905) 75, 84.	
Med. Coll. of Virginia	(1905)	85, 90
Jefferson Med. Coll.	(1905)	92
College of P. and S., Baltimore	(1905) 83, 85, 85,	87, 90
University of Baltimore	(1908) 77;	80
University of Kentucky	(1905)	79
University of Colorado	(1904)	86

Nebraska August Report.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Aug. 9-10, 1905. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 18, of whom 9 passed and 9 failed. Representatives of the following colleges passed:

College.	PASSED. Year. Grad.	Per Cent.
Lincoln Med. Coll*	(1905)	75.25
Barnes Med. Coll*	(1906)	81.5
Northwestern University	(1905) 93.3, 90.75,	92.8
Denver and Gross Med. Coll.	(1905)	78.25
College of P. and S., Chicago	(1905)	87.3
University of Kentucky	(1906)	90.6
Ohio Med. University	(1900)	77.6

*Second examination.

California August Report.—Dr. Charles L. Tisdale, secretary of the State Board of Medical Examiners of California, reports the written examination held at San Francisco, August 15-17, 1905. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. Forty-two candidates were examined, of whom 20 passed and 22 failed. Representatives of the following colleges passed:

College.	PASSED. Year. Grad.	Per Cent.
Johns Hopkins University, Baltimore	(1903)	83.2
University of California	(1905)	86, 84.4
Northwestern University	(1905)	76.6
University of Missouri	(1905)	76.6
University of Michigan	(1884) 83.1; (1894)	75
Trinity University, Canada	(1897)	88.4
Hahnemann Med. Coll., San Francisco, (1905) 75, 76.2, 76.3, 77, 78.1, 79, 79.5.		
College of P. and S., Baltimore	(1904)	75
Cooper Med. Coll., San Francisco	(1905)	75.6, 76.5
College of P. and S., San Francisco	(1905)	86.5
Society of Apothecaries, England	(1889)	77.3

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ending Sept. 30, 1905:

Arthur, Wm. H., McCaw, W. D., Glennan, James D., surgeons, appointed members of a board of officers, to meet at the Army Medical Museum building, Washington, D. C., for the examination of such officers of the Medical Department as may be ordered before it to determine their fitness for promotion or advancement.

Bratton, Thomas S., asst.-surgeon, ordered to report to Major William H. Arthur, surgeon, president, examining board, Washington, D. C., on Oct. 10, 1905, for examination to determine his fitness for promotion.

Connor, C. H., asst.-surgeon, relieved from duty on the transport *Sheridan*, and will proceed without delay to Fort Stevens, Ore., for duty at that post.

Bratton, Thomas S., asst.-surgeon, granted seven days' leave of absence.

Marrow, Charles F., asst.-surgeon, ordered to temporary duty in charge of office of attending surgeon and examiner of recruits, Chicago, Ill., during absence of Captain Bratton.

Woodbury, F. T., asst.-surgeon, granted thirty days' leave of absence.

Wilson, James R., asst.-surgeon, left Fort Oglethorpe, Ga., on twenty-one days' leave of absence.

Truby, A. E., asst.-surgeon, reports departure from detached duty at Fort Leavenworth, Kan., on thirty days' leave of absence.

Reynolds, Charles R., asst.-surgeon, ordered to report in person on October 5, to Major William H. Arthur, surgeon, president of the examining board at the Army Medical Museum building, Washington, D. C., for examination to determine his fitness for advancement.

The following asst.-surgeons will report in person on the dates specified, to Lieut.-Col. George H. Torney, deputy surgeon general, president, examining board at Army General Hospital, Presidio, San Francisco, for examination to determine their fitness for promotion: Baker, Frank C., October 31; Voss, William R., October 31; Woodbury, Frank T., October 31; Dale, F. A., November 29; Edwards, James F., November 28; Chidester, Walter C., November 28; Williams, Allie W., December 29.

Shortlidge, E. D., asst.-surgeon, leave of absence extended thirty days.

Howard, D. C., asst.-surgeon, ordered to report in person Oct. 10, 1905, to Major William H. Arthur, surgeon, president, examining board, Washington, D. C., for examination to determine his fitness for promotion.

Beagles, James, contract surgeon, granted leave of absence for one month, with permission to apply for an extension of one month.

Whinnery, Jean C., dental surgeon, left Fort St. Michael, Alaska, and arrived at Fort Davis, Alaska, for temporary duty.

McAlister, John A., dental surgeon, arrived at Presidio of Monterey, Cal., for duty.

Moreiera, George, contract surgeon, left San Francisco, with squadron of the Twelfth Cavalry, for Fort Oglethorpe, Ga.

de Quevedo, Luis G., contract surgeon, left San Juan, P. R., and arrived at Cayey, P. R., for temporary duty.

Thorp, Charles L., contract surgeon, ordered from Fort Ethan Allen, to Plattsburg, Barracks, N. Y., for temporary duty.

Greenwell, Samuel A., contract surgeon, left Fort Barrancas, Fla., on leave of absence.

Navy Changes.

Thompson, J. C., P. A. surgeon, ordered to the naval recruiting station, Providence, R. I.

White, E. C., Reed, T. W., Reed, H. U., Old, H. H. H., McConnell, G. H., asst.-surgeons, appointed asst.-surgeons with rank of lieutenant (junior grade), from Sept. 21, 1905.

Wedekind von, L. L. surgeon, detached from the *Lancaster* and ordered to the navy recruiting rendezvous, Chicago.

Richards, T. W., surgeon, detached from the navy recruiting rendezvous, Baltimore, and granted leave for thirty days.

De Valin, C. M., surgeon, detached from the naval hospital, Philadelphia, and ordered to the Lancaster.

Peck, A. E., P. A. surgeon, detached from the *Bennington* and ordered to the Quincy.

Angeny, G. L., P. A. surgeon, ordered to the naval hospital, Philadelphia.

Moore, J. M., P. A. surgeon, detached from the navy recruiting rendezvous, Chicago, and directed to wait orders.

Brown, R. M., asst.-surgeon, detached from the navy yard, Mare Island, Cal., and ordered to the Naval Medical School, Washington, D. C.

Geiger, A. J., asst.-surgeon, ordered to the navy yard, Mare Island.

Hull, H. F., asst.-surgeon, detached from the Naval Hospital, Philadelphia, and ordered to the Naval Academy.

Heiner, E. G., asst.-surgeon, detached from the navy yard, Washington, D. C., and ordered to the Chicago.

Richardson, F. J., acting asst.-surgeon, detached from the *Scorpion* and ordered to the navy recruiting rendezvous, Baltimore, Md.

Field, J. G., surgeon, detached from the *Solace* and ordered to the *Celtic*.

Spear, E., surgeon, detached from special duty at St. Petersburg, Russia, and ordered to the Asiatic station.

McConnell, C. H., Reed, H. U., Reed, T. W., White, E. C., and Old, H. H. H., asst.-surgeons, ordered to Washington, D. C., for course of instruction at the Naval Medical School.

Oman, C. M., asst.-surgeon, ordered to the Naval Hospital, Norfolk, Va.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the period from September 16 to 29:

SMALLPOX—UNITED STATES.

California: San Francisco, Sept. 2-16, 2 cases.
District of Columbia: Washington, Sept. 9-16, 1 death.
Florida: Jacksonville, Sept. 9-16, 1 case.
Illinois: Galesburg, Sept. 16-23, 1 case.
Minnesota: Four counties, July 31-Aug. 14, 28 cases; six counties, Aug. 14-21, 26 cases; three counties, Aug. 21-28, 6 cases; two counties, Aug. 28-Sept. 11, 8 cases.
Ohio: Cincinnati: Sept. 1-8, 4 cases, Sept. 15-22, 3 cases.
Pennsylvania: Allegheny, Sept. 2-9, 1 case; York, Sept. 9-16, 7 cases.
Wisconsin: Appleton, Sept. 16-23, 4 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 29-August 5, 6 cases.
Argentina: Buenos Ayres, June 1-30, 24 deaths.
Brazil: Pernambuco, July 1-31, 393 deaths; Rio de Janeiro, August 20-27, 14 cases, 3 deaths.
China: Ninchwang, Aug. 5, 1 case.
Ecuador: Guayaquil, Aug. 23-Sept. 5, 7 deaths.
France: Paris, Aug. 27-Sept. 9, 25 cases, 5 deaths.
Great Britain: Liverpool, Sept. 9-16, 1 case, imported; Plymouth, Sept. 2-9, 9 cases.
India: Bombay, Aug. 9-15, 1 death; Calcutta, Aug. 5-26, 4 deaths; Karachi, Aug. 6-13, 1 case, 1 death; Madras, Aug. 5-15, 14 deaths.
Italy: General, Aug. 16-24, 14 cases; Aug. 31-Sept. 7, 7 cases; Catania, Aug. 31-Sept. 7, 2 cases; Messina, Aug. 12-19, 4 cases, 4 deaths.

Russia: Moscow, Aug. 12-Sept. 2, 15 cases, 6 deaths; Odessa, Aug. 19-Sept. 9, 15 cases, 3 deaths; St. Petersburg, Aug. 19-26, 3 cases, 1 death.
Turkey: Constantinople, Aug. 23-Sept. 10, 3 deaths.

YELLOW FEVER—UNITED STATES.

Florida: Pensacola, Aug. 29-Sept. 25, 101 cases, 12 deaths.
Kentucky: Lexington, Sept. 17, 2 refugees.
Louisiana: Ascension Parish, to Sept. 23, 70 cases, 3 deaths; Assumption Parish, to Sept. 25, 30 cases; Avoyelles Parish, to Sept. 25, 10 cases, 2 deaths; East Baton Rouge Parish, to Sept. 24, 5 cases; East Carrol Parish, to Sept. 23, 164 cases, 31 deaths; Iberville Parish, to Sept. 13, 16 cases, 3 deaths; Jefferson Parish, to Sept. 26, 342 cases, 43 deaths; Lafayette Parish, to Sept. 26, 3 cases; La Fourche Parish, to Sept. 24, 170 cases, 41 deaths; Madison Parish, to Sept. 26, 201 cases, 16 deaths; Morehouse Parish, to Sept. 18, 1 case, 1 death; Natchitoches Parish, to Sept. 20, 76 cases, 5 deaths; Orleans Parish, New Orleans, July 21-Sept. 27, 2,907 cases, 278 deaths; Plaquemines Parish, to Sept. 25, 57 cases, 9 deaths; Rapides Parish, to Sept. 25, 20 cases; St. Bernard Parish, to Sept. 22, 61 cases, 2 deaths; St. Charles Parish, to Sept. 20, 114 cases, 16 deaths; St. John the Baptist Parish, to Sept. 26, 160 cases, 14 deaths; St. Mary Parish, to Sept. 25, 675 cases, 26 deaths; Tangipahoa Parish, Sept. 17, 2 cases; Tensas Parish, to Sept. 22, 4 cases; Terrebonne Parish, to Sept. 23, 229 cases, 10 deaths.
Mississippi: Biloxi: Sept. 15, 1 case; Gulfport, Aug. 15-Sept. 25, 75 cases, 5 deaths; Gulf Quarantine, July 23-Sept. 2, 6 cases, 1 death; Hazlehurst, Sept. 19-26, 23 cases, 4 deaths; Handsboro, Sept. 17-24, 3 cases; Harrison, to Sept. 25, 2 cases; Mississippi City, Aug. 23-Sept. 25, 50 cases; Natchez, to Sept. 25, 35 cases; Scale (vicinity of), to Sept. 25, 5 cases; Scria, Sept. 18, 1 case; Vicksburg, Aug. 30-Sept. 25, 67 cases, 7 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Aug. 20-27, 5 cases.
Guatemala: Tocura, Aug. 22, present.
Honduras: Puerto Cortes, Aug. 29-Sept. 5, 2 cases; San Pero, Aug. 20-30, 4 cases.
Mexico: Coatzacoalcos, Sept. 10-15, 1 case; Merida, Sept. 17, 1 case; Tehuantepec, Sept. 2-9, 1 death; Tuxtepec, Sept. 3-15, 2 cases, 2 deaths; Vera Cruz, Sept. 2-9, 4 cases, 1 death.
Nicaragua: San Francisco, Aug. 27, 2 deaths.
Panama: Bocca del Toro, Sept. 9, 1 removed from steamship *Preston*; Panama, Aug. 27-Sept. 6, 6 cases, 1 death.

CHOLERA.

Germany: Hamburg, Aug. 26-Sept. 6, 3 cases, 1 death; Posen-Stettin, Sept. 19, 1 death.
West Prussia: Vistula District, to Sept. 7, 105 cases, 32 deaths.
India: Bombay, Aug. 5-15, 1 death; Calcutta, Aug. 5-26, 56 deaths; Madras, Aug. 5-25, 1,213 deaths.

PLAGUE.

Africa: Cape Colony, Port Elizabeth, Aug. 12-19, 1 case, 1 death.
Brazil: Rio de Janeiro, Aug. 20-27, 9 cases, 2 deaths.
Chili: Taltal, Aug. 20, 3 cases.
India: Bombay, Aug. 6-29, 139 deaths; Calcutta, Aug. 5-26, 74 deaths; General, July 29-Aug. 5, 1,445 cases, 1,054 deaths; Karachi, Aug. 6-27, 29 cases, 20 deaths.

Society Proceedings

COMING MEETINGS.

Delaware State Medical Society, Wilmington, October 10.
Mississippi Valley Medical Association, Indianapolis, October 10-12.
Vermont State Medical Society, Burlington, October 12-13.
New York State Medical Association, New York City, October 16-18.
Kentucky State Medical Association, Louisville, Oct. 18-20.
Medical Society of Virginia, Norfolk, October 24-27.
Hawaiian Territorial Medical Society, Honolulu, November 4.
American Academy of Medicine, Chicago, November 9-10.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Eighteenth Annual Meeting, held at New York, Sept. 19-21, 1905.

(*Continued from page 1022.*)

The After Management of Abdominal Sections.

DR. WALTER B. CHASE, Brooklyn, N. Y., said that, in reviewing his personal experience, he is led to the conclusion that the principal and by far the most frequent condition after laparotomy requiring treatment is flatulence. The accumulation of gas in the intestinal tract is present, to a greater or less extent, in a majority of cases. The principal causes are reversed peristalsis, intestinal paresis, and the effect of the anesthetic itself. He seldom gives anodynes, except in conditions of pain, making a possible exception in cases when peritonitis was present prior to the operation, or other structures involved in the operation were so friable that peristalsis should be prevented for a time, or in cases following intestinal anastomosis. Its administration for the relief of pain is admissible and perhaps mandatory. It is a matter of much moment what anodyne is selected. Ordinarily he uses codein hypodermatically in doses of gr. ¼ to ½, or more, if required. While its power to relieve pain and check peristalsis is much inferior to that of morphin, its lesser disturbance of the nervous system, checking of secretion, and tendency to undue constipation makes it an agent of great value. It is imperative that a reliable preparation be used. In troublesome cases of continued nausea the administration of small doses of cocain, gr. 1/10 to 1/12, exercises a salutary sedative influence on the nerves supplying the stomach, and is attended with happy results. Either the nausea or flatulence, or both, may disappear in a few hours after operation.

Among the newer remedies for the relief of intestinal paresis is the alkaloid of the calabar bean. Salicylate of physostigmin, given in doses of gr. 1/100 to 1/50, or even more, hypodermatically, repeated once in four hours, seems to induce a powerful contraction of the circular fiber of the intestinal tract. The diet of patients after abdominal section calls for the greatest circumspection, always following the rule that nourishment, taken per os, before the stomach retains or digests it, is positively harmful. When shock is profound, minute doses of morphin sulphate are among the most powerful stimulants, and superior to most for prompt and sustained effect. The author discussed at length the importance of bodily temperature and position of patient after laparotomy.

Trivial Uterine Causes of Severe Gastric Disturbances.

DR. FRANCIS REDER, St. Louis, said that, during the last two years, eight patients came under his observation, six of whom presented a train of symptoms that would ordinarily be grouped as those of hysteria or neurasthenia, moderately severe in character, the remaining two patients being free from any such pronounced neuropathic phenomena, and some in fairly good health, with the exception that their stomachs were weak. The pelvic organs, on examination, gave evidence of disease, and, although the examination did not reveal anything of a serious nature, yet local minor surgical procedures afforded relief.

In the cases cited by the author, it was a surgical procedure that anticipated the pathologic conditions. He said to wait for pathologic conditions to give evidence of their existence by more pronounced local symptoms in gynecologic disease, where there is a marked reflex neurosis, would be to invite secondary conditions that might prove of a very grave nature.

DISCUSSION.

DR. RUFUS B. HALL thought the cases reported by the essayist had pathologic conditions sufficiently marked to justify operation, regardless of their neurotic condition. To cure nervous patients, it is sometimes necessary to remove every obstacle in the way of perfect health physically. He is convinced that if many of these cases had not been operated on their condition would have become worse, a more grave pathology would have resulted later, and it would have been more trying for the patients, thus making the surgery more difficult and harder for the patients to recover from the operation.

DR. X. O. WERDER, Pittsburg, is not enthusiastic about operating on neurotic patients, as the results are not usually good, and he feared the essayist would have some of the patients on whom he had operated return in a few months with the same symptoms having recurred.

Prolapsus Uteri and Its Treatment.

DR. HERMAN E. HAYD, Buffalo, N. Y., briefly spoke of the various conditions which contribute to the production of prolapsus uteri, and then immediately discussed its treatment by surgical means only. His operative treatment is carried out according to the degree of the descensus and the necessity for the preservation of the uterus. He believed that in minor degrees of prolapsus uteri, with rectocele and cystocele, the Alexander operation, with well-directed plastic surgery of the vagina and perineum, will cure these simple forms. When the prolapsus extends to the introitus, or the cervix points through the vulva, a vaginal hysterectomy, with a well-performed anterior and posterior colporrhaphy and a perineorrhaphy, accomplishes the best results; and the effect is permanent if the vault of the narrowed vagina is sewed firmly to the cut edges of the broad ligament. When it is desirable to save the uterus for the purpose of child-bearing, or to continue the function of menstruation, the cervix must be amputated and an anterior and posterior colporrhaphy and perineorrhaphy must be per-

formed and the uterus firmly ventrofixated to the abdominal wall through a median abdominal incision. Usually all these operations can be performed at one sitting, but if it is desirable to make two operations the posterior colporrhaphy and perineorrhaphy must be done at the same time, say three weeks after the first operations. The author, however, prefers the removal of the uterus, as this operation has been infinitely more successful in his hands. He also deprecated the performance of all operations which close the vagina, as he believed this unnecessary and because he had seen much unhappiness result from this procedure.

For the extreme cases of pelvic hernia, he was particularly pleased with a reprint sent him by Dr. Crile, in which he advocated a very elaborate and extensive operation. For one such case, which occurred in his own practice, he sewed the united vagina and broad ligaments to the abdominal wall, and the result was very satisfactory. However, such extreme measures are seldom called for, as most cases can be cured by the other operations described.

Dr. Hayd then detailed his operation on the posterior vaginal wall and the perineum, in which he cuts out a large triangular piece of the posterior central part of the vagina, and then, with the finger in the rectum as a guide to make tense the obturator fascia and levator ani muscle, he sews these opposing structures in perfect apposition with fine chromic gut, which layer of sutures is buried by bringing together the vaginal mucous membrane by another layer of sutures, and finally the skin is brought together by silkworm gut. This operation lessens the size of the vagina and lengthens it by producing an oblique canal instead of a horizontal one, and by carefully approximating the fascia and levator ani, the *sine qua non* of all perineal operations, the result remains fixed and permanent.

Surgery of the Liver.

Dr. William J. Gillette, Toledo, Ohio, read a paper on this subject, in which, after discussing the control of hemorrhage, the power of the liver to regenerate itself, infection and cholemia, he described a means of controlling liver hemorrhage in certain cases of severe bleeding when the blood vessels can not be easily reached. It sometimes happens that to tie them requires a further enlargement of the lacerated liver substance. This of itself increases the gravity of the patient's condition. Three years ago he was called in haste to see a young girl of 14 years, who had been shot by a target gun, the bullet entering between the eighth and ninth ribs, near the costal cartilage, and passing through the right lobe of the liver, lodging behind the stomach. The low velocity of the bullet had caused it to make a tear rather than a perforation. When first seen the child was nearly pulseless, and had all the evidences of a severe internal hemorrhage. Her face and lips were white and bloodless. The abdomen was opened. An incision was made close and parallel to the costal cartilages on the right side. The abdomen was found full of blood, which could be seen freely oozing from the torn liver. He attempted to control this first with catgut ligatures, but the friability of the tissues prevented. Some time previously he had had an experience with a similar wound of the liver made by a bullet, and had attempted to control the hemorrhage by packing with gauze; but the patient, a strong, robust man, had promptly died from the continued loss of blood. Postmortem revealed that the gauze packing had been entirely inadequate to control it. Having this case in mind, he did not feel like trusting to gauze again, and, inasmuch as it was not controlled by direct ligation, it occurred to him that by passing sutures from within, entirely through the liver substance and through the abdominal wall, making exit between the ribs after the manner of a staple, and tied firmly on the cutaneous surface, that permanent and constant pressure could be made, sufficient to control the hemorrhage without the ligature cutting into the friable liver tissue. Five or six such sutures were now introduced on the proximal side of the wound, each one embracing about three-quarters of an inch of the liver substance. Care was taken to link them together so as to include all the bleeding tissues in their bite. The ligatures emerged between the ribs the same distance apart as they were entered on the liver substance, and when firmly tied all the hemorrhage and oozing ceased at once. Other injuries to the viscera, which were slight, were repaired, a drainage tube inserted, and the abdomen closed. The patient made an uninterrupted recovery. He has since used this suture in two instances, in one of which in removing a very adherent gall bladder he met with a severe hemorrhage which was readily controlled with it. Recovery was prompt. The third case was one in which a hydatid cyst the size of a small cocoanut was removed, together with a large number of gallstones, from a suppurating gall bladder. This patient unfortunately died from peritonitis a few days later, but the hemostasis was perfect.

The author referred at length to the more recent contributions to liver surgery.

Papillary Cyst Adenoma of the Breast.

Dr. Edward J. Ill, Newark, N. J., said that this disease is comparatively rare, but that he has seen eight cases in his practice. There is not very much literature about the disease. Its characteristic symptoms are a clear yellowish-pink to dark bloody discharge from the nipple. On palpating the breast a small tumor can be made out early in the disease which may become multinodular later on. He has observed cases for from a few weeks to eleven, twelve and twenty-one years. The pathologic condition found is a papillary adenomatous mass projecting into the milk duct. It is non-malignant in character. The patient may get well without any interference. When the disease persists, he advises removal of the breast.

Discussion.

Dr. Miles F. Porter, Fort Wayne, Ind., said that cystadenoma of the ovaries and other organs is prone to become malignant, and no one can tell whether the tumor is malignant or not until he has removed it. Some of these tumors are pronounced to be non-malignant by microscopists, but there is recurrence after operation. Others are pronounced malignant, but the disease does not return after operation.

Dr. Joseph Price, Philadelphia, has never regretted the early removal of tumors of the breast for fear they might become malignant. He cited cases in point.

The Byrne Operation in Cancer of the Cervix.

Dr. X. O. Werder, Pittsburg, Pa., described the operative technic employed by Byrne, and said that Byrne places special stress on the importance of thorough and repeated cauterization of the wound surfaces and edges from which cancerous material has been removed, regarding it as the best safeguard against a recurrence of the disease. The most remarkable feature of the Byrne operation, when compared with all other operations undertaken through the vagina for the cure of cancer of the cervix, and one which seems to justify Byrne's conclusions, is the almost uniform absence of local recurrence. While employing the method described by Byrne in his first cases, he invariably followed it by the ablation of the remaining portion of the uterine body and apendages. Subsequently, however, he simplified the procedure very materially by dispensing with the preliminary amputation of the cervix. The principal features of the Byrne operation have been retained, namely, thorough and repeated cauterization of all wound surfaces and edges. The operation differs from the usual vaginal hysterectomy by the use of the cautery knife for detaching the cervix from its vaginal connections, the application of the electrothermic clamps devised by Downes, and the final cauterization of the stump with the dome-shaped cautery. He described the technic as he employs it at the present time. Of the sixteen cases operated on by him, only one died, about four weeks after the operation, from uremia. She is supposed to have suffered from nephritis for ten years previously; the operation, he thinks, may have hastened, but not caused her death.

Indications for Hysterectomy in Puerperal Septicemia.

Dr. Charles Greene Cumston, Boston, stated that hysterectomy applied to the treatment of acute puerperal infection is as yet a mooted question as far as its indications are

concerned, and it would be quite as illogical to advise this interference in all serious cases as it would be systematically to condemn it. All surgeons seem to be in accord as to the great difficulty of formulating the indications for this operation, and especially the time when these become formal. To come to a conclusion, all clinical methods of examination and those of the laboratory must be employed. The latter, however, are far from being of equal value, as no positive result can be obtained from a bacteriologic examination of the lochia or blood. Cytologic examination of the blood will give excellent data as far as the prognosis of the type of infection is concerned. Clinically, there is no one valuable sign, but taken together the symptoms obtained by careful intrauterine examination may indicate the necessity of surgical intervention when all other therapeutic procedures have failed. Septicemia occurring at once after labor can not derive benefit from surgery, but, on the other hand, it would appear that hysterectomy is indicated in cases of secondary septicemia with a slow evolution, or those taking on a pyemic type proceeding by successive stages, on the condition that there are no visceral metastases, in which case surgical treatment would be a method of exception.

Abdominal Hysterectomy for Multiple Fibroids Complicated by Pregnancy.

DR. J. HENRY CARSTENS, Detroit, reported the case of a woman, 42 years old, who was never pregnant before. The tumor was noticed for five or six years, but not accompanied by hemorrhage. Menstruation was regular until May; there was a slight show in June and July. He operated in the middle of August. The growth became rapid during the last three months. Patient recovered from the operation for the removal of the tumors.

These cases are not uncommon; still they are sufficiently rare to warrant reporting them. In nearly all cases the women are sterile; a growth develops, and after some years they become pregnant, which makes one suspect that there was some abnormal condition of the uterus, perhaps some malposition which prevented impregnation, but as the result of the growth the uterus was pulled up or shoved over in one direction or another in such a way that the ova could pass into the uterus and pregnancy occur. This seems to him the correct explanation of the occurrence of pregnancy in sterile women after the development of fibroid tumors.

In reference to general rules for these cases, the cases vary so much that no definite rule can be laid down to govern all cases, but on general principles he thinks cases of fibroids complicated by pregnancy can be left alone if they are subperitoneal and located at the upper half of the uterus. Fibroids located in the lower half of the uterus or in the broad ligament should be removed. Fibroids adherent or complicated with other pelvic diseases should be removed by enucleation, or, in some cases, an abdominal hysterectomy should be performed.

(*To be continued.*)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Annual Meeting, held in Scranton, Sept. 26-28, 1905.

Election of Officers.

The following officers were elected: President, Dr. William H. Hartzell, Allentown; secretary, Dr. Cyrus Lee Stevens, Athens (re-elected), and treasurer, Dr. George W. Wagoner, Johnstown (re-elected). Bedford Springs was selected as the next meeting place.

Adopted Uniform Plan.

The committee appointed for the purpose a year ago reported in favor of such modifications of their present constitution and by-laws as to make them conform to the uniform plan recommended by the American Medical Association. Pennsylvania was one of the few states that had had the county plan before the matter was taken up by the American Medical Association, but certain details were not in conformity with the uniform plan recommended. The trustees now become the councilors.

Medical Defense and Fraternal Relief.

The society also introduced an amendment to the by-laws providing for medical defense similar to that which has been in force in the Philadelphia County Medical Society, the Chicago Medical Society and a few other local societies for some time.

Action was also taken looking to the provision for the relief of physicians in sickness, as well as for the widows and children of deceased physicians.

(*To be continued.*)

AMERICAN PUBLIC HEALTH ASSOCIATION.

Proceedings of the Thirty-third Annual Meeting, held in Boston, Sept. 25-29, 1905.

The President, DR. F. F. WESBROOK, Minneapolis, in the Chair.

Addresses of welcome were delivered by Attorney-General Herbert F. Parker, on behalf of the state, and by Dr. Samuel H. Durgin, on behalf of the city of Boston.

President's Address.

The president, Dr. F. F. Westbrook, Minneapolis, said that in America two causes are operative in rendering it difficult to protect the health of the public, one of which is the lack of real knowledge on the part of the public in regard to the scientific truths which underlie the conservation of its chiefest asset, namely, its health, and the other is a tendency in the preservation of individual freedom to lose sight of our obligations to respect the rights and privileges of others who may be less assertive.

The older method of securing experience by experimentation on the public should be superseded by requiring preliminary special training at universities and by boards of health, so that while retaining for the good of the public the service of those already trained and competent, they may be re-enforced and, when necessary, succeeded by those who have received such special training.

Knowledge of the clinical manifestations of disease is important, but often much more than clinical experience and ability is essential. While in scarlet fever, smallpox and certain of the infectious diseases it is nearly always possible to diagnosticate the condition present, and by so doing protect others from infection, there are a number of diseases in which clinical observation alone proves utterly insufficient. As illustrating this he mentioned diphtheria.

The policy of the association should be to anticipate demands for special work and special information along the lines which are closely applicable to public health, and care must be taken that with so many societies the members do not lose interest because they have failed to provide a place and a stimulus for workers in all lines which directly affect the work of the association.

Lessons to Be Learned from the Present Outbreak of Yellow Fever in Louisiana.

DR. JAMES CARROLL, Washington, D. C., read a paper on this subject, which is published in this issue of THE JOURNAL, page 1079.

Yellow Fever in Mexico.

DR. EDUARDO LICEAGA, Mexico City, said that since the institution of modern methods in the City of Mexico, yellow fever has been diminished to a marvelous extent. He predicts that at no distant date this disease will be completely exterminated, as has been done in Cuba.

Etiology and Prevention of Yellow Fever.

DR. JOHN GUITERAS, Havana, Cuba, confined his remarks to new points that have arisen in the struggle with yellow fever during the year which have been evolved by investigations. The French Commission from the Pasteur Institute, experimenting in Rio Janeiro, produced a case of yellow fever by applying to a non-immune mosquito the eggs laid by an infected mosquito. This raises a very interesting question as to the transmissibility of yellow fever by the progeny of infected mosquitoes. The speaker thinks that by experimentation they have settled this matter in Havana, that an infected mosquito can not transmit infection through its prog-

ony or eggs. He is inclined to believe from a perusal of the experiments of the French Commission that there is some mistake. Marchoux, the French experimenter, acknowledges that he has only one such case. He worked in an infected locality, and it is possible, Dr. Guiteras thinks, that the patient was accidentally bitten by another infected mosquito without Marchoux knowing it.

There is another argument against the transmission of yellow fever by the progeny of infected mosquitoes. It seems to him that it would have been impossible to have eradicated yellow fever in Havana as they have done if that theory is true. In getting rid of yellow fever in Havana, they began to attack the epidemic in the beginning, so that it was comparatively easy to wipe out the disease in that city. This would have been impossible if the progeny of infected mosquitoes had been also infected.

Another interesting point to which Marchoux called attention was that one source of infection is to be found in young children affected with a mild form of yellow fever. Dr. Guiteras said this is not new, as Blair, Chalfie and himself pointed this out in their investigations at Key West and in Havana, and they had shown that there were many cases of mild yellow fever among children that were unrecognized who became sources of infection by the mosquito. It was a study of the problem of yellow fever in young children in the yellow fever zone that led him to call attention to and insist on the great danger of mild cases of yellow fever. He has been calling attention to this for many years, not only in cases of young children, but also in young adults, especially of the colored population who are apt to develop mild cases of the disease. These he has always considered the most dangerous transmitters of the infection.

Special attention was directed to the high percentage of hemoglobin found in yellow-fever cases, which he said is an important differential diagnostic point between this disease, typhoid fever, malaria and influenza, three affections that are frequently confounded with yellow fever. In influenza, typhoid fever and malaria the percentage of hemoglobin is low—70, 75, perhaps 80. In malaria and typhoid fever, on the second day of the disease, one notices a decline in the percentage of hemoglobin in the blood. On the other hand, in yellow fever the percentage of hemoglobin is high, very often 100, sometimes above 100, during the first three, four and five days of the disease, and rarely below 90. If the percentage of hemoglobin goes below 90, and the case proves to be one of yellow fever, he considers that there is a complication, or the patient previously suffered from malaria.

Another point that has been of considerable aid to him during the present epidemic of yellow fever, especially in Florida, where they were confronted with the existence of an epidemic of dengue, and where the question came up as to whether or not yellow fever was present, is the diazo-reaction of Ehrlich. The diazo-reaction of Ehrlich is an important diagnostic sign in typhoid fever, but it may be present in other infectious diseases. He could say positively, however, that this is never present in uncomplicated cases of yellow fever, and on two occasions his mind was completely relieved as to the existence of yellow fever during the past summer in the South by finding the Ehrlich diazo-reaction in the urine. He was, therefore, able from his experience in Havana to exclude at once yellow fever in these two cases.

Another diagnostic point is albumin in the urine. Albumin in the urine is a characteristic sign of yellow fever. He insists more than he has ever done before on the importance of this symptom, and on a certain interpretation that must be given to the presence of albumin in the urine. After a careful study of many kinds of fever in Havana, he has found that albumin in the urine is more common in other infectious diseases that he has heretofore thought. It is common in cases of influenza and of typhoid fever, but not so common in malaria. It is only occasionally found in cases of malaria. Albumin in the urine is found in cases of dengue. The special point he brought out was that the quantity of albumin found in the urine in cases of yellow fever is out of all proportion to the other symptoms present.

Dr. Guiteras concluded his remarks by referring to the methods of disinfection that are being employed in New Orleans, and complimented the physicians in charge of yellow-fever cases in Louisiana on the efficient work they are doing.

He spoke of the use of superheated steam for the destruction of mosquitoes, saying that this agent is being used to great advantage in the present epidemic in Louisiana, and it is a valuable and efficient adjunct.

Resolutions on the Yellow Fever Epidemic.

A committee consisting of Drs. John Guiteras, Frederick Montizambert, P. H. Bailhache, James Carroll, William Bailey and Eduardo Licaga, presented the following resolutions, which were adopted:

Whereas, The results obtained during the present epidemic of yellow fever in New Orleans by the methods of mosquito extermination, and by the prevention of the access of the mosquito to the patients, have been far in advance of the results obtained by the older methods; and

Whereas, It has been possible by the new methods to hold in check and gradually to reduce an epidemic that has taken a firm foothold in the midst of the largest non-immune population that was ever exposed to yellow fever: therefore be it

Resolved, (1) That the association sees in these results a further confirmation of the view that yellow fever is exclusively transmitted only by the bite of an infected mosquito. (2) That the association is of opinion that an efficient plan of action against the propagation of yellow fever at the beginning of an epidemic can be easily established on the basis of this depiction. (3) That the successful carrying out of such plan depends on a thorough understanding of the mosquito doctrine by the people, and the support that they may give to the proper authorities, especially in the proper handling of the first cases and of all suspicious cases. (4) The association wishes further to congratulate the Public Health and Marine-Hospital service for the brilliant work done by Dr. Joseph H. White and his colleagues in New Orleans, and to urge on all concerned that the said service be called on to take charge permanently of maritime quarantine along the Gulf Coast.

Election of Officers.

The following officers were elected: President, Prof. F. C. Robinson, Brunswick, Maine; vice-presidents, Drs. J. J. Kinyoun, Glenolden, Pa.; Domingo Orvananos, Mexico City, and Richard H. Lewis, Raleigh, N. C.; secretary, Charles O. Probst, Columbus, Ohio; treasurer, Dr. Frank W. Wright, New Haven, Conn.

Mexico City was chosen as the place for the next annual meeting in 1906.

(To be *continued*.)

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Tenth Annual Meeting, held at Buffalo, N. Y., Sept. 14-16, 1905.

(*Continued from page 1122.*)

Advantages and Disadvantages of Glasses in Railway Service.

Dr. Nelson Black, Milwaukee, Wis., gave a report of the opinion of ophthalmologists throughout the United States as to the safeness of an employe requiring the use of glasses. The advantages of, and objections to, the protection of the eyes of engine men and firemen by glasses was discussed. The question of allowing engine men, who have been a long time in the service, to wear glasses for constant use, when their vision has fallen below the required standard, but can be brought up to standard by lenses, has been receiving very serious consideration by railway officials. Many railroad companies allow their old engine men to run with glasses, requiring them to carry an extra pair. An opinion was asked as to the safety of such an engine man, and the following was given: "It is my opinion that a railroad employe (engine man or fireman), who has been in the continued service for a period of not less than five years, and who on re-examination falls below the required standard of vision, and such vision can be brought up to said required standard with glasses, his color perception meeting the required standard, and there being no ocular disease, is a safe employe. Such employe should be required to carry at least one extra pair of glasses. He should also be re-examined semi-annually to ascertain if there has been a further decrease in vision, and if the glasses fully correct the visual defect."

Fixation of External Rectus Muscle in Nystagmus and Paralysis.

Dr. J. Elliott Colburn, Chicago, reported a case of nystagmus, one of paralysis of the right internus, and another of motor paralysis of the third nerve.

Ocular Origin of Migraine.

DR. GEORGE M. GOULD, Philadelphia, read an article on this subject which will be published in THE JOURNAL.

Retinal Changes as an Aid to Diagnosis in Vascular Degenerations.

DR. THOMAS A. WOODRUFF, Chicago, called attention to the slight anomalies that are recognized from time to time which show themselves in alterations in the caliber and contour of the retinal vessels. In some cases these changes may be so slight as to be overlooked. A very careful and closer study of the fundus will enable one to detect slight structural changes in the retinal vessels, which will lead him to form the conclusion that there is commencing degeneration of the arterial walls, also in the smaller arteries elsewhere in the body, signifying an arterio-capillary fibrosis. Tortuosity of the vessels is not a positive sign, unless it is confirmed by other variations from the normal which are found in the early stages of arterial degeneration. These changes are readily recognized by an ophthalmoscopic examination in the early stages of arterial degeneration, and if appropriate treatment is promptly instituted the disease can be arrested and a favorable prognosis given.

Formalin in the Treatment of Diseases of the Ear, Nose and Throat.

DR. OTTO J. STEIN, Chicago, narrated his personal experience with this drug in a variety of diseases of the ear, nose and throat.

The Treatment of Recent Embolism of the Retinal Arteries By Digital Massage.

DR. H. V. WÜRDEMANN, Milwaukee, Wis., gave abstracts of all the cases he could find in the literature, including four of his own, describing the treatment in detail. Two of his cases were completely cured, and two were benefited by the massage, as well as a number of the cases reported in the literature. This treatment was strongly recommended by the author, as yielding better results than any other form of treatment. In fact, older methods, unassisted by massage, are deemed of little use.

Dextrophoria.

DR. FRANCES VALE, New York, said that this condition is found in the examination of the field of vision with the tropometer. It shows a tendency for the visual lines to turn to the right or left under the influence of the direct innervation of the muscles. It has probably an anatomic cause. It is found associated with esophoria and exophoria, and in the operative correction of all cases of lateral imbalance is a useful indication of a necessary procedure.

Advancement Operation versus Tenotomy.

DR. EDW. J. BERNSTEIN, New York, assumed that the position of Landolt is correct, that tenotomy of the recti is unjustifiable except under rare conditions, as it substitutes two weak muscles for one normal muscle and one relatively weak one, thereby producing insufficiency in amplitude in both lateral directions. The technic of the operation is the Weeks advancement. With this operation the author corrects not only actual strabismus, but also muscular insufficiencies which are not amenable to non-surgical means.

Clinical Measurement of Torsion.

DR. LUCIEN HOWE, Buffalo, pointed out the difference between torsion with convergence and torsion with parallel axes. He has devised three instruments for measuring torsion with convergence, which were exhibited and demonstrated.

Intranasal Pressure a Cause of Diplopia and Headache.

DR. KATE WILEY BALDWIN, Philadelphia, stated that pressure from the left middle turbinal acts as an irritant and causes diplopia. There is no relief from treatment directed to the eyes but disappears entirely soon after a middle turbinectomy. In a case occurring after a very serious nervous strain recurrence took place several months later. The patient was relieved by division of a postoperative synechia. When headache is caused by intranasal pressure the nasal tissues usually are found hypersensitive, especially those on which pressure causes pain in some particular part of the head or in the eyes. When pain is unilateral only one side of the nose is abnormally sensitive. This sensitiveness disappears after operation.

Treatment of the Diseased Attic.

DR. F. C. HOTZ, Chicago, stated that success in the treatment of chronic aural discharges depends chiefly on the personal attention of the attending physician, particularly if the attic is involved, ere the routine treatment of syringing, use of the gouge, drains and instillations of various solutions is absolutely ineffective. The diseased conditions should be attacked directly by instruments with which the attic can be cleaned thoroughly and apply the proper solutions directly to the diseased wall. Instruments were shown and the treatment described.

Some Displeasing Results of the Mastoid Operation.

DR. J. A. STUCKY, Lexington, Ky., said that it is very essential that general practitioners should know more of suppurative mastoiditis, how to recognize it, and what treatment to urge. Important lessons learned from failures and unpleasant after-effects of the operation were pointed out. Some of the most displeasing after-effects are protracted discharge, obstinate granulations, atresia of the external auditory canal, slow healing of the wound, unsightly scar, and post-auricular fistula. The most important of these are due to: 1. Neglect in urging the operation early, instead of waiting until the disease has completely invaded and infected the contiguous structures of the antrum, and the resistive and recuperative power of the patient is undermined by the absorption of the retained septic material. It is just as dangerous to wait for external evidence of pus formation in the mastoid process as it is in the abdomen in appendicitis. 2. Want of proper preparation of the patient before operating. The presence of indican in the urine is a most important factor in toxemia, high temperature, and slow and unsatisfactory recovery which follows a thorough operation. 3. Want of thoroughness in removing all diseased and infected tissue, and giving unobstructed drainage to every part of the wound. 4. Carelessness and indifference shown in after-dressings of the wound, and in diet and quietude of the patient for several days after the operation.

The Submucous Resection of the Septum.

DR. WILLIAM LINCOLN BALLENGER, Chicago, described the various methods for the submucous resection, and presented a critique of the methods. He described his own method with the swivel knife for removing the cartilaginous septum through an anterior incision and exhibited his swivel knife, together with specimens removed with it.

The Front Bent Gouge in Mastoid Operations.

DR. W. S. BRYANT, New York said that this gouge aids the operator in saving time, gives him security, and enables him to carve the bone with perfect precision. It does away with accidental injury to the sigmoid sinus, even when irregularly placed. It permits the surgeon to remove the posterior canal wall without injury to the facial nerve. With its aid the operator can remove the outer wall of the attic and hanging wall of the meatus without accidentally opening the middle fossa. He can smooth out the bony excavation without danger of going further than he intends. When the mastoid process is sclerosed this gouge enables the operator to proceed rapidly with the excavation of the bone, without increased risk. It is not necessary to use a mallet with this gouge, thus sparing the patient the infliction of disturbing blows on the head.

The Oto-Projectoscope.

DR. M. A. GOLDSTEIN, St. Louis, Mo., gave a practical demonstration of this apparatus, which consists of a combination of the modified and simplified epidiascope and the Brunton otoscope. It may be used in the class-room without the otoscope attachment for projecting anatomic and pathologic specimens in their natural color, depth and details. Photographs, diagrams and all forms of illustrations may be projected directly on the screen without further preparation.

Relations Between Medical Practitioners and Eye Specialists.

Dr. James A. Spalding, Portland, Me., said that many medical men will sign petitions to legalize opticians as scientific fitters of lenses, send patients with diseased eyes and foreign bodies in them to opticians, consult opticians for diseases of their own eyes and the fitting of lenses, and send friends and patients to opticians even when in their own town there reside educated medical men who have specialized in diseases of the eyes. The reasons for this are thoughtlessness, jealousy, belittlement of the skill demanded in fitting glasses, desire to have the optician and family of the patients, irritation at the large fees demanded by oculists, and the belief that the specialty is overrated, and that many of the practitioners are undereducated.

Specialists must deserve recommendations from practitioners. They must be well educated and ethical men. No one can be a good specialist in six weeks. If well-educated specialists should fail in proper medical support, they can not gain a living in competition with hospitals, which take the operations, and opticians who advertise for and get the refractive cases in a vast majority of towns and cities in the land. Just as physicians organize, so specialists should organize, and as an organization publish under the auspices of their publication committee papers on diseases of the eye. They should teach that eyes with imperfect sight are diseased eyes, and need proper treatment at the hands of medical specialists in the way of proper lenses. They should issue their own set of test types and hang them in every school. They should send a representative into every normal school to test the eyesight of the pupil teachers and lecture before these future teachers about the eye. They should keep in touch with the colleges and their students, some member following each class through its four years of college life. They should furnish to medical practitioners a fee table, for people of moderate means who wish to know the cost beforehand. They should refuse to buy lenses of opticians who make it a rule to fit lenses. Or, better still, they should furnish their own lenses just as hosts of medical practitioners prescribe their own medicine, and so retain their patients and their means of living.

Dr. L. A. W. Alleman, Brooklyn, N. Y., said that ophthalmology should be taught as a necessary part of a medical education and not as a specialty. Personally, he does not attempt to cover the entire field of ophthalmology. He does not advise the student to learn to use the ophthalmoscope, and he feels reasonably successful, if, at graduation, his student has learned to recognize the cases which he may safely and properly treat, and those which are of so serious a nature as to at once require the assistance of the specialist. The points which the author strives to impress on the student are the assistance that he may expect from an examination of the eye in forming a general diagnosis; also the necessity of recognizing ocular disorders as a factor in the causation of general disease—the systemic causation of many diseases of the eye.

The Mechanism of Accommodation and Astigmatic Accommodation.

Dr. Edward Jackson, Denver, Colo., said that recent physiological examinations have shown that the increased refraction of crystalline lens during the accommodation accompanies relaxation of its suspensory ligament, but that the lens does not at this time become more spherical. Skiascopy also shows that increased lenticonus attends accommodation, and that each lens presents its individual peculiarities of aberration and astigma. When freed from the tension of its capsule, it tends to assume a shape determined by the development of the lens fibers, and on these may depend astigmic accommodation.

The following papers were read: "Electric Ophthalmia," Dr. Edward N. Merkel, Pittsburg; "Fallacies in Ophthalmology," Dr. Joseph E. Willetts, Pittsburg; "Radium," Dr. W. Freudenthal, New York; "Topical Examination of the Mastoid," Dr. A. H. Andrews, Chicago; "Hemorrhage in Nose and Throat Operations," Dr. Emil Mayer, New York; "Angio-Endotheliome of the Middle Ear," Dr. Joseph Beck, Chicago; "Acute Exanthelous Salpingitis," Dr. Frank H. Kayle, New York; "Middle Turbinate Body in Disease of the Accessory Sinuses," Dr. Charles M. Robertson, Chicago; "Interstitial Keratitis," Dr. Thomas Faith, Chicago; "Herpes Zoster," Dr. William B. Murray, Minneapolis; "Unilateral Discharge of Otalgia," Dr. Percy Friedenberg, New York; "Dendritic Keratitis," Dr. George F. Keiper, Lafayette, Ind.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Herpes Zoster.

Leale, in the *New York Med. Jour.*, discusses this condition from a pathologic standpoint and states that he believes the disease to be a nervous affection due to an acute hemorrhagic inflammation of the posterior ganglia and trunks of the nerves supplying that portion of the skin on which the characteristic eruption is situated. In the treatment, therefore, we must bear in mind we have to do with an acute inflammatory condition involving certain structures of the nervous system and perhaps associated with a mild form of cerebrospinal toxemia.

As soon as the disease is recognized the patient is put to bed and given a laxative, a fever prescription may be given, and a light diet, preferably milk. The author then directs treatment to the causative seat of the disease. Counterirritation is applied over the roots and trunks of the nerves involved. By this means the congestion is lessened and the absorption of the inflammatory products is hastened by going directly to the seat of the trouble and thereby favorably affecting the symptoms. The author recommends the use of dry cups, which should be applied over the ganglia of the posterior roots and over the points of emergence of the nerves involved. In order to do this properly it is necessary to have at least a general idea of the location and relations of the spinal nerves. The ganglion is developed on the posterior root of each of the spinal nerves, and they are situated in the intervertebral foramina external to the point at which the nerves perforate the dura mater. Having located the posterior roots involved, the cups are applied just to the affected side of the spinous processes and allowed to remain long enough to insure their maximum suction power. After the first set is removed they may be reapplied if deemed necessary. A few cups are then applied to the location of the emergence and over the course of the nerves involved. In this the physician is guided by the seat of the pain, hyperesthesia, and by the location of the eruption. If the cups are carefully and accurately applied the author claims a shortening of the duration of the disease and a very great amelioration in the severity of all the symptoms, especially the pain. Cups should be applied in the disease and sometimes even before the eruption has appeared. The cupping is repeated every twenty-four hours, preferably at bed time. In this way a nocturnal paroxysm of pain can often be prevented.

It is essential to protect the vesicles and to prevent their rupturing. This is best accomplished by the application of collodion. If the vesicles rupture a dusting powder is most satisfactory:

℞. Zinci oxidi		
Pulv. amyli, aa	℥ss	30
Acidi borici	℥iss	16

M. Sig.: Apply locally to the vesicles and cover with sterile cotton dressing.

After an attack is over general tonics, a mural diet and careful hygienic measures are usually indicated.

Cerebrospinal Meningitis.

Hogner, in *American Medicine*, reports cases of this disease successfully treated by the intramuscular injection of mercuric chlorid. In the author's opinion the intravenous route is the best for injections. If the fluid is injected extravenously it causes considerable smarting, and hard, very annoying infiltrations, swellings, stiffness, etc.; sometimes even gangrene may result. The technic for the intravenous injection is simple: "Take a 2 c.c. morphin syringe and inject into a large vein, which is readily accessible (with or without previous constriction of the upper part of the limb). As a rule I use a vein of the forearm or lower part of the upper arm, but sometimes I use a vein of the legs or one of the scrotum. The injection should always be given very slowly and if, when it is started, swelling or pains occur (I do not mean the insertion pain),

then the point of the needle is placed extravenously, and must be corrected, or the needle should be withdrawn and inserted in another place. If the smallest quantity of the fluid has been injected extravenously the patient should be given at once a hard, thorough massage, however painful it may be, for thus only can the consequences be prevented.

"For intravenous injections I use the finest, shortest and best steel needles; for intramuscular injections I have very coarse needles one and one-half inches in length. In the cases reported I injected a plain distilled water solution, but it is better to add some sodium chlorid. For ten years in the treatment of syphilis I have used:

	Parts.
Mercuric chlorid	1 to 2
Sodium chlorid	1 to 9
Distilled water	1,000

"One can safely inject from 1 c.c. to 4 c.c. of this solution, i. e., from 2 mg. to 8 mg. of the mercuric chlorid. Intravenously 8 mg. is the maximum dose. Generally I inject from 2 mg. to 4 mg., and have in more than 5,000 injections never seen any bad symptoms result from the injection."

Alopecia.

Walsh, in the *Journal of Medicine and Science*, has used the following with gratifying success in preventing this condition:

℞. Acidi salicylici 3iii 12
Acidi carbolic 3i 4
Olei ricini 3ii 8
Alcohol q. s. ad. ..... ℥vi 90

M. Sig.: Apply freely to scalp once or twice daily.

Fissure of Anus.

In the treatment of this condition, Katzenstein, in *Bull. Gen. de Therap.*, recommends the following ointment:

℞. Cocaine hydrochlor.
Ext. belladonnæ, āā ..... gr. i 06
Ichthyol 3iss 6

M. Ft. ungt. Sig.: Apply twice daily.

Ergot in Labor.

Applegate, in *American Medicine*, discusses the therapeutic value of ergot during labor. He states that the drug has no place in the first stage of labor. In normal labor, as is well known, the rhythmic contractions of the uterus are accompanied by gradual thinning and relaxation of the cervix, while under the influence of ergot the predisposition is to constriction and rigidity, particularly of this portion of the uterus, and the fact that it is valuable, or even safe, in uterine inertia can not be substantiated. If rest for a time, friction over the fundus, and stimulation with strychnin or quinin, fail to establish the normal first stage, it is far better and safer to complete the dilation manually and to deliver instrumentally, than to prescribe ergot prematurely, with its attending dangers. The dangers from the administration of ergot are threefold: 1, Rupture of the uterus; 2, asphyxiation of the child or paralysis of the fetal heart from compression; 3, retention of the placenta and membranes. Complete rupture of the body of the uterus, in this author's judgment, rarely occurs from the premature administration of ergot, extensive lacerations are not so rare. Until it is definitely ascertained that descent or partial protrusion of the placenta through the cervical canal has taken place, the administration of the ergot should be regarded as premature, notwithstanding the opposite opinion held by some well-known authorities.

A dram of the fluid extract administered immediately after the termination of a long, tedious labor, or when uterine inertia has been a factor, is unquestionably of value as a preventive measure, since slow involution inevitably follows such a labor, but for the control of established hemorrhage the effects are indicated at once, and far better results can be obtained by the administration of aseptic ergot hypodermically.

A distinction, however, should be made between private and hospital practice; in the latter, with competent resident physicians to compress the uterus in the proper way and manner, to pack in an emergency, or to administer ergot hypodermically, together with trained nurses to administer a hot vaginal douche (temperature from 110 F. to 115 F.), ergot is rarely needed as a preventive measure. Ergot is also of undoubted value following placenta prævia, for the purpose of closing the sinuses of the abnormal placental site, both for preventing too free bleeding and septic infection.

To obtain, then, the greatest therapeutic value of ergot in labor, its administration should be limited to, or near, the end of the third stage, administered by the mouth when indicated for the prevention of hemorrhage, and hypodermically when indicated for the control of hemorrhage.

Medicolegal

Privilege in Federal Courts—Health Stipulations.

The United States Circuit Court of Appeals, Third Circuit, says that at the trial, in the United States Circuit Court for the District of New Jersey, in the case of Doll vs. Equitable Life Assurance Society, objection was made to allowing a practicing physician and surgeon of New York, who had attended the sister of the insured in her last illness, to testify as to the cause of her death. The ground of this objection was that a statute of the state of New York prohibited a physician or surgeon from disclosing "any information which he might have acquired in attending any patient in a professional character and which information was necessary to enable him to prescribe for such patient as a physician, or do any act for him as surgeon." Counsel contended that, inasmuch as the contract of insurance was made in the state of New York, the law and usages of the place of the contract should govern in matters of construction affecting the validity of the contract and the rights of the parties, and that, therefore, this statute was controlling in the trial of this case. But the Circuit Court of Appeals thinks that the judge of the Circuit Court committed no error in admitting the testimony objected to. It says that the contention stated confused those laws which enter into and form a part of the contract, or with reference to which the contract was made, with those, merely, which govern remedy and procedure. The prohibition of the New York statute is a rule as to evidence or procedure, and does not enter into the contract of insurance. The interpretation of the contract does not at all depend on it. The rule affects the remedy and not the contract. In such cases the law of the forum (of the place where legal redress is sought) and not of the place of the contract, must govern. The New York statute, therefore, was not applicable to the trial in the United States Circuit Court for the District of New Jersey. Section 721 of the United States Revised Statutes, providing for the application of state laws to trials in the United States courts, had no relevancy to the point here under consideration. The Supreme Court of the United States, in Connecticut Mutual Life Ins. Co. vs. Union Trust Company, 112 U. S. 250, merely decided that the provision of the New York statute here referred to was obligatory on the court of the United States sitting *within that state*. Another thing said by the United States Circuit Court of Appeals in this case is that courts have been reasonable, and sought to protect the beneficiaries of life insurance policies from careless or ill-considered statements as to prior health, by not holding non-serious ailments or those not material to the risk, within the warranty of a statement by the insured, but it will not do, by too great refinement of argumentation, to fritter away the protection which these stipulations as to previous illness are properly intended to give to the insurer. They must receive a sensible and reasonable construction.

Physicians as Expert Witnesses and Their Opinions.

The Supreme Court of Alabama says, in Braham vs. State, a homicide case, that a physician, as an expert, having testified in answer to a hypothetical question that under the hypothesis stated he would say the person was of unsound mind, it was proper on cross-examination for the state to test the accuracy of his information as to the causes of insanity. The jury is not concluded by the opinions given by experts on the question of whether sanity exists or not, and, while the court pronounces on the competency of witnesses as experts, it is the province of the jury to measure the weight of their opinions. In order that the jury may have a proper appreciation of the value of such opinions, it is entirely competent to develop on cross-examination the extent and accuracy of the expert's knowledge of the particular subject on which he

has been called to testify as an expert. Another witness in this case testified on the direct examination that he was a practicing physician, and had been such since 1897; that he was assistant county physician and had seen the defendant a number of times in the county jail; that he treated the defendant for a severe cold, which turned out to be measles; and that he treated him again a few days before the trial. He further testified that he saw the defendant often in the jail, and talked with him, he supposed, a dozen times; that his conversations were chiefly about his physical condition; that from his acquaintance with, observation of, the defendant, and from his professional knowledge, he would say that the defendant was sane. On cross-examination the defendant asked the physician this question: "Are you an expert on insanity?" The court has been unable to find any case in which the precise question presented has been considered. It is undoubtedly the law that the court must determine the question of the competency of a witness to testify as an expert, and that all evidence which goes to the competency of such witness should be addressed to the court. It is also true that, after a witness has been held competent by the court, it is the province of the jury to determine the weight of the evidence of such witness, and, as ruled above, a jury is not concluded by the opinion of experts, but must weigh such opinions with the other evidence; and in order to afford the jury ample opportunity to test the value of such opinions it is competent on cross-examination to inquire of the expert as to the extent and accuracy of his knowledge with reference to the particular subject on which, as an expert, he has expressed an opinion. As was said in De Phue's case, 44 Ala. 39, "A physician is an expert, and as such he may be asked questions which develop his capacity to form a correct judgment on the experiences of his profession." In this respect it might be competent to ask the physician if he had a diploma, or from what college he graduated, or the extent of his experience in the treatment of persons afflicted with insanity. In this way some of the data would be furnished on which the court, in the first instance, would be able to draw its conclusion as to the competency of the witness, and the jury, in connection with the evidence on which the opinion is based, could measure the weight to be accorded the opinion expressed. But this court submits that the question under consideration did not call for any data of the kind above referred to, nor data of any kind, but simply called for the opinion or conclusion of the witness as to his capability; and to have allowed an answer to it would have been to substitute the witness for the court and jury, whose duty it was to pass on the competency of the witness and the weight of his evidence. It was insisted by counsel that the question should have been allowed because it called for a fact peculiarly within the knowledge of the witness. But not every fact that lies peculiarly within the knowledge of a witness is competent evidence. The court notes, too, the fact that the witness, by his evidence, made himself competent to express an opinion that the defendant was of sound mind, aside from the fact that he was an expert.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

September 23.

1 *Digitalis in the Treatment of Valvular Disease of the Heart. R. M. Goepp, Philadelphia.
2 *Diverticulums of the Esophagus. W. G. Morgan, Washington, D. C.
3 *Observations on the Therapeutics of Acute Insanity. D. R. Brower, Chicago.
4 Fractures of the Lower End of the Radius, with Forward Displacement of the Distal Fragment. R. Russ, San Francisco, Cal.
5 *Three Cases of Cancer of the Corpus Uteri. F. C. Hammond, Philadelphia.
6 Pathology of General Paralysis of the Insane. J. D. O'Brien, Massillon, Ohio.

1. Digitalis in Valvular Heart Disease.—Goepp says that digitalis increases the contractions of the heart and lengthens the intervals of rest (diastole), and that at the same time the nutrition of the muscle is increased because more blood is forced into the coronary arteries. The indication for digitalis is found in the dynamic state of the circulation, the precise nature of the cardiac lesion being of minor importance. It may be indicated in any form of valvular disease and it is not contraindicated even in aortic insufficiency. Contraindications for the use of digitalis are: hypertrophy with established compensation, and degeneration of the myocardium, and high arterial tension. The cumulative action of digitalis may be disregarded and the administration kept up continuously for a considerable period. The best preparation, he states, is the infusion made from the powdered leaves of digitalis, and not, as is sometimes the case, by diluting the fluid extract. Digitalin is a useful preparation and can be given hypodermically. It should be given in considerably larger doses, he thinks, than is usually recommended. It is well to begin with 3 mgm. (1/20 grain), but no hesitation need be felt in increasing the dose up to 5 mgm. or 8 mgm. (1/12 or ⅛ gr.)

2. Diverticulums of the Esophagus.—Morgan describes and classifies esophageal diverticulums, details symptoms, etc. In diagnosis he advises the use of two tubes, which may be passed simultaneously; after one tube is passed into the diverticulum, a second tube is passed along side and so guided into the stomach or into a second diverticulum. By the introduction of two tubes into different cavities these may be explored separately. In accessible esophageal diverticulums in the cervical region, surgical procedures for radical cure are available, such as obliterating the cavity by invagination or the establishment of a fistula from the borders of the diverticulum to the skin, to afford drainage for the sac, etc. In non-surgical cases, the conditions may be palliated by keeping the diverticulum empty, and cleansed by irrigation. Astringent or antiseptic applications or irrigations may also be employed to relieve inflammation and ulcerative conditions in the sac. As the greatest trouble in these cases arises from starvation, so the greatest results of treatment, often amounting to symptomatic cure, may be obtained from proper nutrition. When dysphagia is only moderate a sufficient amount of food can sometimes be introduced into the stomach by natural deglutition, by careful selection of easily swallowed foods, careful eating, and by keeping the esophageal passage open and straight by the sound or bougie. When the power of swallowing is greatly impaired or entirely abolished, gastrostomy and feeding through the fistula affords one method of keeping up nutrition. When dysphagia is extreme and the esophagus passable by the stomach-tube, a far better method of feeding is by gavage, which the patient can learn to perform for himself. An entirely adequate amount of food can thus be introduced into the stomach without excessive discomfort, through the natural passages instead of a troublesome artificial fistula, and without the necessity of a formidable operation. The following are some of the foods which Morgan says may be included in the dietary: Beef juice, rich soups and broths, including those containing cream, eggs and wine; puree of all vegetables which do not have tough fiber, among them being puree of spinach, beans, peas, celery, asparagus and potatoes; milk and cream; cocoa, chocolate, coffee, tea and some wines; eggs, raw or soft; scraped meat and fish chowder; porridge made from thoroughly cooked breakfast cereals; a few sweets, such as bees' honey, calf's foot jelly, and simple custards. Once a week the patient is instructed to masticate thoroughly several mouthfuls of some hard substance like crackers with butter, or bread with butter, before one or other of the meals, and even to swallow some portion of it in order to keep up the secretion of saliva in the mouth. By immediately washing out the diverticulum and esophagus no harm is done.

3. Therapeutics of Acute Insanity.—Brower says that insanity is a profound error in general metabolism, which may sometimes be overcome by alteratives; mercury, potassium iodid, and the chlorid of gold and sodium. In considering the therapeutics of acute insanity, the physician must bear in mind the necessity of attention to the general constitutional state of the patient. Rheumatism, gout, tuberculosis and syphilis require special consideration. Special attention must also be given to elimination by the bowels and kidneys. In-

testinal fermentation, when present, must be diminished by intestinal antiseptics, of which Brower believes that calol and zinc sulphocarbolate are among the best. Disorder of the gastrointestinal tract is one of the most common errors in these cases. Colonic impaction is common, and is frequently overlooked. He states that relief of this condition by aloetics and flushing, when this is resorted to early, will often change the whole aspect of the case. Brower insists on the importance of a generous diet for these patients, and states that if the mental condition of the patient interferes with this forced feeding should be resorted to. In case this is necessary, the nasal tube should be used, unless there is some condition in the nose which would interfere with its use; in that case, the œsophageal tube will have to be used. He calls attention to the necessity of controlling the insomnia and advises caution in the use of chloral and of hyoscin hydrobromate.

5. Cancer of the Corpus Uteri.—Hammond reports three cases of cancer of the body of the uterus illustrative of interesting points in the diagnosis of this disease. He states that it is a fact of peculiar interest that malignant disease of the cervix occurs frequently in comparatively young women. During the past year, he says, two women, each aged 34, with inoperable carcinoma of the cervix, applied at the Samaritan Hospital for treatment. He lays especial emphasis on the importance of early diagnosis in these cases and states that every woman who is bleeding should be subjected to a careful pelvic examination. He cautions the physician against waiting for the "classical" symptoms of pain, hemorrhage, fetid discharge and cachexia. The appearance of hemorrhage one or two years after the menopause, he says, is strong presumptive evidence of cancer. In some cases, he states, instead of hemorrhage, a slight watery discharge, with a characteristic unpleasant odor, is an early symptom of the disease.

Medical Record, New York.

September 22.

7 *Individual Treatment of Diabetes Mellitus. H. S. Stark, New York.
8 Congenital Umbilical Hernia. C. C. Cumston, Boston, Mass.
9 Sixty Cases of General Paresis—A Clinical Study. F. L. Hunt.
10 High Frequency Spark in a Xanthoma-like Degeneration of the Lips. C. W. Allen, New York.
11 *Case of Acute Internal Hydrocephalus. T. Diller, Pittsburg, Pa.
12 *Case of Abdominal Pregnancy Undiagnosed Until After Operation. A. J. Ronginsky, New York.

7. The Individual Treatment of Diabetes Mellitus.—Stark advises the treatment of the individual patient in diabetes mellitus, rather than the arbitrary treatment of the disease by stereotyped methods. The severity of the pathologic process can not be measured by the amount of sugar in the urine. The physician should study the power of the patient to assimilate carbohydrates; his general state, whether anemic, plethoric, obese, or emaciated; his mental attitude, his digestion, his ability to maintain nitrogenous equilibrium, the complications, and the preferences of the patient as to diet. Patients can not be put on a diet that starves them of carbohydrates, but the amount taken can be lessened. Under prophylactic treatment the author advocates a modified diet for the children of diabetics, with a systematic examination of the urine. The occurrence of an excess of uric acid may be a forerunner of diabetes. The patient should be restrained from gratifying his appetites for food and drink. If emaciated and weak, a diet of increased fats is valuable. For glycosuria and polyuria, the author states that codein should be given only in very moderate doses. For the skin lesions about the genitals he uses a soothing lotion and protective application. In bad cases catheterization for a time works well. When diabetic coma is established very little can be done. To prevent coma, he uses alkali-therapy, purgation by croton oil, and blood letting if necessary.

11. Acute Internal Hydrocephalus.—Theodore Diller reports this case, which was that of a girl who died at the age of 4½ years of what, at the autopsy, was found to be internal hydrocephalus. The cortex was nearly smooth, the convolutions and fissures being almost entirely obliterated. The brain resembled a bladder, and from the distended ventricles about a pint of clear fluid escaped. The condition apparently began with an obscure febrile attack at the age of 2½ years. Six months later, a double convergent squint developed, and after that the manifestations of the internal pressure steadily progressed until the patient became totally helpless and died of exhaustion.

12. Abdominal Pregnancy Undiagnosed Until After Operation.—Ronginsky's patient was seen at various times by fourteen physicians, yet it was not until an exploratory laparotomy was performed that it was discovered that the underlying condition was an ectopic pregnancy. The age of the fetus was about 3½ months, and the placenta was attached to the small intestine, and to the ovarian end of the tube. The symptoms had at first simulated indigestion and spasm of the intestine, and later a condition of chronic intestinal obstruction developed. The patient grew progressively more anemic and emaciated, and went into shock after the operation, dying three and a half hours later.

Boston Medical and Surgical Journal.

September 22.

13 *Methods in Medicine. L. F. Barker, Chicago.
14 *Medical Treatment of Gastric Ulcer and Hyperchlorhydria. F. C. Shattuck, Boston.

13. Methods in Medicine.—Barker calls attention to the various advances in recent years in the science of medicine. He states that the aspects of scientific medicine, the theoretical and the practical, ought to work together and that medical science and medical art should live in a state of wedlock. Scientific medicine does not undervalue observation or good clinical work; it does not maintain that the laboratories are the only places whence illumination comes. On the contrary, scientific medicine realizes to-day more than ever before that the ideas which stimulate experimental work which will be fruitful for diagnosis and treatment must be gained, in part at least, from the sick people themselves. A scientific physician, Barker states, should have a large bedside experience and should be familiar, from personal observation on human beings, with the forms of disease on which he is working. He should be able to make accurate diagnoses and thorough prognoses, and should have a knowledge of the various remedies which empiricism has recommended. He says that it has taken thousands of years to elaborate the present methods of clinical examination, and the results which have been achieved give us increased confidence in man's power in medicine. If the past is an index of the future, Barker thinks that we need not hesitate to assert with regard to medicine that, in time, through the further applications of scientific methods, "we shall know; we shall be able to predict; we shall gain the power to control."

14. See abstract in JOURNAL, July 1, 1905, page 65.

New York Medical Journal.

September 23.

15 Rheumatic Poison and Its Treatment. (Continued.) F. Le Roy Satterlee, New York.
16 Original Ideas in Interdental Splints and the Result from Their Use. H. J. Kaufer, New York.
17 Surgery at the Dawn of the Nineteenth Century. (Concluded.) N. Jacobson, Syracuse, N. Y.
18 Six Lectures on Diseases of Blood. (Continued.) J. M. Swan, Philadelphia.
19 Study of Masked Rheumatism. (Continued.) G. F. Souvers, Germantown, Pa.
20 Food Factor in Asthma: Hyperemia. F. Hare, London, England.
21 *The Menopause. J. N. Upshur, Richmond, Va.
22 List Practice. D. W. Bedinger, Bellbrook, Ohio.

21. The Menopause.—Upshur reviews the symptoms most commonly occurring in women at this period of life and says that the treatment should aim at sustaining the system in such a way as to alleviate nervous irritability and to supply stimulus and nourishment which will keep the patient as nearly as possible at the normal standard of health. He states that drugs are not to be administered in any case in which simpler and less active agents will accomplish the same end, and emphatically protests against the injudicious prescription of narcotics or alcoholic stimulants because of the great danger of making the patient dependent on them. Hygienic regulation of all the functions and habits should be attended to, and especially the patient should keep early hours.

Lancet-Clinic, Cincinnati, Ohio.
September 23.

23 *Carcinoma of the Rectum and Treatment. G. B. Evans. Dayton, Ohio.
24 Local Lesions and Treatment of Amebic Dysentery. J. P. Tuttle, New York.
25 *Use and Abuse of Fresh Air and Over-Feeding in Tuberculosis. W. H. Prioleau, Asheville, N. C.
26 Infant Feedings. W. H. DeWitt, Cincinnati.

23. See abstract in JOURNAL, July 8, 1905, page 128.

24. Id.—Oct. 24, 1903, page 1041.

25. Use and Abuse of Fresh Air and Overfeeding in Tuberculosis.—Prioleau calls attention to the fact that while fresh air in abundance is to be desired above all else in the treatment of tuberculosis, it is better for the patient to be comfortable indoors than to be uncomfortable in the open air. Nothing, he states, is more unpleasant to an invalid than being cold, and there are a few things more harmful. Besides the discomfort of it, cold stops digestion, chills the periphery of the body and congests the internal organs. He states that the proper feeding of the patient is as important as fresh air. A tuberculous patient is often required to dispose of a full tuberculosis diet, without regard to his digestive or assimilative powers. Ordinarily the digestive powers of a consumptive are poor, and forced feeding overburdens the stomach and destroys any natural appetite a patient may have. A consumptive should never know hunger, but he should be allowed the privilege of an appetite. As the appetite is generally poor in these cases, a tuberculous patient should be required to eat more at the three principal meals than he feels like doing, as it is a well-known fact that a tuberculous patient can digest and assimilate more than he feels like eating. Prioleau concludes his article by stating that each patient should be supplied with fresh air and nutritious food, according to the comfort of his body and the power of his digestion, remembering always that the personal equation enters into each case.

St. Louis Medical Review.
September 16.

27 Etiology of Cancer. M. Schueller, Berlin, Germany.
28 Climate and Relapses in Pulmonary Tuberculosis. A. Dixon, Jr., El Paso, Texas.

Journal of Experimental Medicine, New York.
August.

29 *Study of Pneumococci; Comparison Between the Pneumococci Found in the Throat Secretions of Healthy Persons Living in Both City and Country and Those Obtained from Pneumonic Exudates and Diseased Mucous Membranes. W. H. Park and A. W. Williams, New York.
30 *Application of the Reaction of Agglutination to the Pneumococcus. E. E. Cullins, New York.
31 Comparative Study of Pneumococci and Streptococci from the Mouths of Healthy Individuals and from Pathologic Conditions. W. T. Longcope and W. W. Fox, Philadelphia.
32 *Study of Pneumococci and Allied Organisms in Human Mouths and Lungs After Death. C. Norris and A. M. Pappenheimer, New York.
33 Studies on the Pneumococcus. C. W. Duval and P. A. Lewis, Boston.
34 Studies of the Pneumococcus and Allied Organisms with Reference to their Occurrence in the Human Mouth. L. Huerger, New York.
35 *Comparative Study of Pneumococci and Allied Organisms. P. H. Hiss, Jr., New York.
36 *Viability of the Pneumococcus After Drying; Study of One of the Factors in Pneumonic Infection. F. C. Wood, New York.
37 The Growth of Pneumococci and Streptococci in Blood Serum. W. T. Longcope, Philadelphia.

29. Study of Pneumococci.—The investigations carried on by Park, Williams and others were planned after consultation with the members of the commission for the investigation of acute respiratory diseases of the health department of the city of New York, but were otherwise entirely independent of that body. Two hundred patients were examined for the presence of pneumococcus, with the following results: Typical pneumococci were present during the winter months in the throat secretions of a large percentage of healthy individuals in the city and in the country. A higher percentage of atypical strains of pneumococci has been obtained from healthy persons than from those suffering with pneumonia. In the latter cases the atypical strains may have been overlooked, because of the larger number of typical pneumococci present. Many of the atypical strains seemed to be closely related to the streptococci. The so-called *Streptococcus mucosus* of Schottmueller, which has hitherto been classed with the distinct streptococci, is placed as a definite variety among the pneumococci, and it is recommended that the name be changed to *Streptococcus lanceolatus, var. mucosus*. A lower percentage of strains of pneumococci virulent for rabbits in the doses used was obtained from normal individuals by rabbit inoculations of mass cultures than from cases of pneumonia by the same method. Since the virulence of pneumococci may be rapidly increased for a susceptible species of experimental animal by successive passage, and since pneumococci obtained from most pneumonias are more virulent for experimental animals than are those obtained from healthy individuals, therefore, the virulence of pneumococci from cases of human infection is probably increased for human beings. Hence, cases of pneumonia, to a certain degree, should be considered as contagious, and, since the virulence of the pneumococcus may be quickly increased and since the organism is very prevalent in normal sputum, all possible measures should be taken to restrict public expectoration. By repeated inoculations into sheep of a pneumococcus strain, a specific protective power of this serum for mice is developed against the homologous strain and against certain other strains, one morphologic variety (*Streptococcus lanceolatus, var. mucosus*) being thus clearly differentiated from other strains. Coincident with this production of protective power, a slight specific increase of the sheep serum in phagocytic power *in vitro* was observed with some strains of pneumococci, all strains of *Streptococcus lanceolatus, var. mucosus* acting similarly with the serum produced by the inoculation of one strain; the strains of some varieties, however, have shown no definite relationship between the phagocytic power and the protective power of the serum.

30. Agglutination Pneumococcus.—The report made by Collins is a part of the work on pneumonia planned by the pneumonia commission. Owing to unavoidable circumstances, the work done was curtailed considerably; hence, Collins is able to make only the following preliminary report: 1. Pneumococci, by reason of their agglutinating properties exhibit a tendency to separate into numerous groups similar to streptococci. 2. *Pneumococcus mucosus* forms a distinct and consistent variety. The production by it of common agglutinins for some pneumococci and the resistance of the agglutinins produced by it to absorption by the streptococcus indicate a nearer relation to the former than to the latter organism. 3. The agglutinating substances in the serum of immunized animals were demonstrated by absorption tests to consist of specific and group agglutinins in cases in which the agglutinins were sufficiently developed to make use of this method. 4. The pneumococci seem to show marked differences in their ability to undergo agglutination. 5. There was considerable uniformity of reaction of the various strains in low dilutions, but this uniformity is not continued as the animal becomes more highly immunized. 6. At present it is not possible to establish a definite relation between the agglutination reaction and the other characteristics of the pneumococcus, except in the case of the *Pneumococcus mucosus*.

32. Bacteria Found in Mouth and Lungs After Death.—The studies made by Norris and Pappenheimer were confined to a determination of the prevalence of the pneumococcus in normal lungs and in lungs which presented various lesions. The report embodies the results of the bacterial examination of 42 human lungs. The cases were taken at random and included patients dying outside of the hospital, patients dying in the hospital within 24 hours after admission and patients dying 24 hours or longer after admission. The lungs were selected from subjects examined within 24 hours after death. The authors found that organisms of the pneumococcus or streptococcus group were present in the lungs of practically all cases, whether normal or showing a variety of lesions; strictly speaking, they were found in forty out of forty-two cases, or in 95 per cent. of the series. The pneumococci and the streptococci were obtained in practically similar percentages—that is, 50 per cent. of the cases. Pneumococci were obtained more frequently in the small series of patients exposed for some time to hospital atmosphere. The number of cases examined, however, was insufficient, and the findings may thus be accidental, and hence of no value. Test micro-organisms, namely, small portions—half a dram or less—of *Bacillus prodigiosus*

introduced into the human mouth after death were conveyed to and recovered from the lungs by culture in a little over half of the cases in which this experiment was tried. The test microorganisms are probably conveyed to the lungs with the fluid which collects just before death. The numerous manipulations entailed in the removal of the body from the wards to the morgue greatly facilitate the entrance of any fluid from the pharynx and buccal cavity into the lungs. It follows, logically, from the results obtained in this experiment, that the cultural findings after death are not a guide to the bacterial contents of the lungs during life, and that any deductions made from such findings are unreliable and deceptive. There is every reason to believe that any of the micro-organisms present in the mouths and pharynx, and, in many cases, in the stomach contents, may enter the lungs, and, if conditions be suitable, increase in numbers, during the time between death and the examination of the lungs. There exists, perhaps, more frequently than has hitherto been suspected, a series of diplococci, intermediate between the typical pneumococci and streptococci. The diplococci of this type were found in 40 per cent. of the cases examined. The differential diagnosis of these atypical diplococci from the pneumococci and streptococci is a difficult one, depending, as it does, on general cultural characteristics. No single character, such as the presence of capsules or the fermentation of inulin, virulence, etc., has been found to be a certain criterion. The agglutinative reactions made seem to show that these intermediate diplococci have none or only slight agglutinative affinities to the typical pneumococcus. Further tests must be made, however, with the various methods at hand before this statement can be accepted as final. These diplococci are of interest from the fact that they have been found in the blood during life, and in the pial exudate in cases of meningitis, endocarditis, etc. These studies throw no light whatever on the conditions which determine the onset of lobar pneumonia in apparently healthy persons. Moreover, the authors were unable to draw conclusions as to the presence of pneumococci in the lungs during life, or as to the channels by which they gain access thereto.

35. **Comparative Study of Pneumococci and Allied Germs.**—The investigations in this field of work made by Hiss lead to the following conclusions: (a) Organisms, not to be distinguished by morphologic characters or by any physiologic peculiarities from true pneumococci derived from pathologic sources, occur with frequency in the mouths of healthy persons and those suffering from slight inflammations of the nasopharynx, and the only permissible and legitimate conclusion is that these organisms are true pneumococci. (b) There are other organisms in normal mouths and from pathologic sources that morphologically or by staining reactions are not definitely to be distinguished from pneumococci, and can only be recognized by a careful study of their fermentative activities and agglutination reactions. These organisms are non-inulin fermenters. (c) The organism known as *Streptococcus mucosus* is at times found in cultivations from the mouths of apparently healthy individuals, and that, although it shows certain peculiarities distinguishing it from the typical pneumococcus, it is probably very closely related to, and a variety of, this species. (d) Other organisms occur which in their fermentation are indistinguishable from pneumococci, but which enter morphologically or in agglutination reactions show a variation from this type. Some of these are probably temporarily or permanently modified pneumococci or *Streptococcus mucosus*; others, it may be, are streptococci of types which it has not heretofore been possible to recognize and describe. Some of these organisms were isolated from pneumonic lungs at autopsy, or from some internal source, such as the circulating blood, and presumably have long resided under conditions which may be considered adverse, thus bringing about a modification of their morphology or physiology. This theory is supported by the observation that pneumococci from such sources—perfectly typical morphologically and in fermentative articles—are apt to show a lessening of their ability to agglutinate.

36. **Viability of Pneumococcus.**—According to Wood, the life of the pneumococcus in moist sputum is of considerable duration, the average period being less than two weeks unless the material is exposed to direct sunlight. As such sputum, however, does not give off bacteria even when exposed to strong currents of air, it may be considered as innocuous except to persons handling clothes, bedding, etc., which have recently been contaminated. Under ordinary conditions this sputum dries in the course of a few hours or days. The dried masses retain their virulence for a long time, and if deposited on the floor or on the bedding of the patient may be powdered mechanically, and sweeping, dusting, or brushing the contaminated articles will distribute pneumococci in the air. Fortunately the organisms in the sputum do not remain long in suspension and die off rapidly under the action of light and desiccation. In sunlight or in diffuse daylight the bacteria in such powder die within an hour, and in about four hours if kept in the dark. The danger of infection from powdered sputum, therefore, may be avoided by ample illumination and ventilation of the sickroom in order to destroy or to dilute the bacteria, and by the avoidance of dry sweeping or dusting. Articles which may be contaminated and which can not be cleaned by cloths dampened in a suitable disinfectant should be removed from the patient's vicinity. When a person suffering from a pneumococcus infection coughs, sneezes, expectorates, or talks, particles of sputum or saliva, which may contain virulent pneumococci, are expelled from the mouth. Such particles remain suspended in the air for a number of hours if the ventilation of the room is good. They may be inhaled by persons in the vicinity of the patient, or they may be deposited on various articles in the room. Wood's studies show that, whether suspended in the air or dried on surrounding objects, these micro-organisms become harmless in a very short time, about an hour and a half being the extreme limit, while many of the pneumococci in the spray perish in a few minutes, especially if exposed to strong light. In the light of these experiments, the risk of infection from the pneumococcus is largely confined to those in direct contact with the person whose excreta contain the organism.

Cleveland Medical Journal.
September.

38 *Immediate Mortality in Abdominal Section, Based on a Personal Experience in 2,008 Cases. G. W. Crile, Cleveland.
39 Case of Traumatic Asphyxia. R. H. Birge, Cleveland.
40 Significance of Pathologic Elements in the Urine, with a Description of the Best Methods of Ascertaining Their Source. W. E. Lower, Cleveland.
41 X-Ray Treatment of Skin Diseases a "Passing Fad." W. I. Lefevre, Cleveland.

38. **Mortality in Abdominal Section.**—Crile details his experience in 2,008 cases of abdominal section. The gastrointestinal tract was operated on 894 times, 748 times for appendicitis, with 72 deaths, a mortality of 8.05 per cent. The genitourinary tract was the site of operation 121 times, 41 times for floating liver, with 11 deaths, a mortality of 8.3 per cent. The pelvic organs were operated on 751 times (including five Cesarean sections), with 13 deaths, a mortality of 1.7 per cent. The liver and gall bladder were operated on 130 times, with 11 deaths, a mortality of 8.3 per cent. There were 45 cases of ventral hernia, with 1 death, a mortality of 2.22 per cent., and 65 miscellaneous operations, with 5 deaths, a mortality of 7.6 per cent. The total mortality for the 2,008 cases was 5.2 per cent. In 74 cases, death was due to infection. This does not mean infection following operation in a clean field, but it means that patients with acute peritonitis, general peritonitis, ruptured gall bladder, perforation of the stomach and of the intestines, acute infection following miscarriages and abortions, had gone past medical treatment and operation was done with the hope of controlling or arresting the process. In 12 cases, death was due to exhaustion. These were principally cases of inoperable malignant tumors; in some only cocain incision was made and the inoperability of the tumor established. In several cases of long-continued exhausting infection with multiple abscesses, the patients died of exhaustion. The larger number of the 12 cases in this list occurred in the early years before the great importance of not permitting the patient in an operable case to remain in the

recumbent posture during the repair of the wound was realized. There were no cases of death from shock per se, but there were 10 cases in which the infection existing at the time of operation, and its continuation, together with the shock of the operation, caused death. Emboli and thrombosis were fatal in four cases, three of pulmonary embolism, and one involving the mesenteric artery. The latter patient was supposed to have died of obstruction of the bowels. At autopsy it was found that embolism was the cause of death, the obstruction being secondary. In four instances, pneumonia caused death, in two of which, although it was not proved, Crile felt quite certain that septic emboli were the exciting cause. The other two were cases of bronchopneumonia, vaguely termed other pneumonia. In one case death was due to complete suppression of urine. Obstruction of the bowels per se is not mentioned as having in a single instance caused death. Of this total number of cases, 726 were operated on for relief from infection; that is to say, were infective cases. Of these, the mortality rate was 11 per cent. The greatest risk lies in visceral perforation, typhoid perforation, gastric duodenal ulcer, and gunshot wounds. In 160 malignant tumors treated surgically the risk was 11 per cent. There were 1,169 non-infective cases, with five deaths, a mortality of 4 per cent.

Illinois Medical Journal, Springfield.
September.

43 *Pelvic Infections in Women. T. J. Watkins, Chicago.
44 Diagnosis and Treatment of Laceration of the Vaginal Portion of the Uterus and Female Vagina. L. H. A. Nichersen, Quincy.
44 Suppurative Injuries of the Kidneys, with Exhibition of a Case. W. Fuller, Chicago.
45 *Use of the Tent in the Treatment of Tuberculosis. J. W. Pettit, Ottawa.
46 *New Procedure for Opening the Perineum. J. H. Beeson, Cleveland, Ohio.
47 Chronic Prostatitis and Its Treatment. H. Schiller, Chicago.
48 Cerebral Hereditary Syphilis. W. J. Butler, Chicago.
49 Air Examinations—Importance and Results. A. Dehrman, Chicago.
50 Fever of Tertiary Liver Syphilis. J. L. Miller, Chicago.
51 Value and Place of Duodeno-Choledochotomy in Gallstone Surgery. J. C. Hancock, Dubuque, Iowa.

42. See abstract in JOURNAL, June 3, 1905, page 1802.

43. Tent in Tuberculosis.—Pettit discusses the value of the tent in the treatment of tuberculosis, and points out the advantages of the tent as compared with confining patients in rooms. He says that from an economic standpoint the tent commends itself. The housing of tuberculous patients in buildings is not only unnecessary, but it is in violation of an essential principle which has for its object providing the patient with fresh air. The only argument that can reasonably be deduced for placing patients in buildings is that it is necessary to keep them warm. A tent with necessary furnishings is far cheaper, more rational and more conducive to securing the favorable outcome. Tuberculous patients need not be housed in substantial buildings in order to make them comfortable.

46. See abstract in JOURNAL, May 27, 1905, page 1704.

Washington Medical Annals.
September.

52 *Case of Unusually Large Ureteral Calculus; Transperitoneal Ureterolithotomy. J. W. Bovée, Washington, D. C.
53 *Two Cases of Transposition of Viscera; Hereditary. R. M. Randolph and J. D. Thomas, Washington, D. C.
54 Case of Double Frenulotax. J. W. Bovée, Washington, D. C.
55 Excision of the Hip-Joint for Hip Disease. J. F. Thompson, Washington, D. C.
56 Hysterectomy for Sloughing Degenerated Fibroma of the Uterus. H. D. Fry, Washington, D. C.
57 Modern Ideas on the Treatment of Tuberculosis. R. Reyburn, Washington, D. C.

52. Unusually Large Ureteral Calculus.—Bovée removed an unusually large ureteral calculus transperitoneally. The calculus measured 2¾ by 1¾ by 1½ inches and weighed 1,310 grains. It was kidney-shaped, one end larger than the other, was grayish in color and had rough surfaces. On section it was found to consist of several concentric layers of phosphatic formation covering over a decidedly dark mass one inch in diameter, which contained many layers composed of a deposit of calcium oxalate.

53. Transposition of Viscera.—In the first case reported by Randolph and Thomas the heart, liver and stomach were transposed, but were normal in size. An interesting feature of this case is the fact that the maternal grandfather (the second case) of this patient presents the same phenomena, the heart, liver and spleen being transposed.

Oklahoma Medical News-Journal, Oklahoma City.
September.

58 Principles of Diagnosis of Lesions of the Spinal Cord Due to Trauma. J. Punton, Kansas City, Mo.
59 *Suspension in the Surgery of Abortions. B. F. Fortner, Viola, I. T.
60 Care of Infants, from Birth to Completion of Dentition. J. H. Loving, Blair, Okla.
61 Doctor's Duty Concerning Dying Declarations. W. L. McCann, Oklahoma City, Okla.
62 Simple Method for the Reduction of Luxations of the Humerus. H. Bastian, Philadelphia.
63 Landlord and Tenant. W. C. Sprague, Detroit, Mich.

59. Surgery of Abortions.—The operation suggested by Fortner consists essentially of obliterating the lumen of the Fallopian tubes in cases in which it is impossible or undesirable that the patient shall again conceive. It is performed as follows: The abdomen is entered by the median suprapubic method; the fundus uteri and tube are brought to the surface; the peritoneum overlying the contracted portion of the tube half an inch, or slightly more, from the uterus, is caught up and snipped longitudinally with scissors between tissue forceps; a silk-threaded artery needle is passed through this slit, around and under the tube which is looped up as in the cord in a Bassini hernia operation; the ligature is tied only sufficiently snug to hold without damage; the tube is cut off and its distal end pulled into a second loop of the same ligature, which is tied and dropped back into the peritoneal slit, which, in turn, is closed by two or three running catgut sutures, and the operation is completed, except closing the abdomen in the usual way. The hemorrhage amounts to little more than a stain. Fortner says that this operation goes beautifully with that of fixation in cases in which the woman has acquired a displaced uterus and the incurable habit of aborting, as is found in the best of women. Some of the results of the procedure are: No more conceptions; the distorted, sorely afflicted, suffering bladder and other pelvis organs, with rest, resume their normal condition and function; no more distal tubal or ovarian infections; no more depressing, neurosis-producing apprehensions; no adhesions.

Montreal Medical Journal.
August.

64 Medical Memoirs of Bytown. H. B. Small, Ottawa.
65 Puerperal Infection. A. McDonald, New York.
66 Third Case of Transposition of Viscera and Other Autopsy Findings. J. McCrae, Montreal.
67 Importance of Chemistry in Medicine. J. C. L. Wolf, New York.
68 Interesting Family History of Epilepsy. C. A. Peters, Montreal.

Southern California Practitioner, Los Angeles, Cal.
August.

69 Cases Illustrating Some of the Difficulties in Abdominal Diagnosis. *E. E. Montgomery, Philadelphia.
70 Evils of Institutional Childhood—Sociologic Study. W. Lindley, Los Angeles.
71 Los Angeles Health Department—History. L. H. Schwalbe, Los Angeles.
72 Diseases of Women and Children. W. A. Edwards, Los Angeles.

Columbus Medical Journal.
August.

73 Diethylbarbituric Acid. J. C. Larkin, Hillsboro, Ohio.
74 Inflammation. J. C. Barnhill, Columbus.
75 Carcinoma in Third Generation. W. E. Allaman, Dayton.

Archives of Pediatrics, New York.
August.

76 Acid Autointoxication in Infancy and Childhood. J. L. Morse, Boston.
77 Eye Symptoms of Infantile Scurvy, Case of Infantile Scurvy with Extreme Protrusion of the Right Eyeball, Shown by Autopsy to be Due to a Large Retrobulbar Hematoma. I. Snow, Buffalo, N. Y.
78 Rheumatism in Children. H. B. Deale, Washington, D. C.
79 Erythema Nodosum, Definition and an Illustration. F. S. Mears, New York.
80 Leucocytes in Whooping Cough. C. G. Gruiss and D. R. Themister, Chicago.

Northwestern Lancet, Minneapolis.
August.

81 Problems in Appendicitis Cases. A. E. Benjamin, Minneapolis.
82 Need of a More Rational Therapy. J. W. Bell, Minneapolis.
83 Adenoid Operation on a Child, and Some Practical Observations in Regard to It. E. A. Campbell, Minneapolis.

Northwest Medicine, Seattle, Wash.

August.

84 Pain and Vomiting in Diseases of the Stomach. H. M. Read, Seattle.
85 Early Diagnosis of Tabes Dorsalis. J. R. Harris, Seattle.
86 Autointoxication as a Factor in Mental Diseases. D. A. Nicholson, Seattle.

Southern Medicine and Surgery, Chattanooga, Tenn.

August.

87 Treatment of Typhoid Fever in Small Towns and Rural Communities. A. H. Freeman, Starks, Fla.
88 Dysentery. J. W. Pierce, Tate Springs, Tenn.
89 Tuberculosis in Children. St. G. T. Grisman, Richmond, Va.
90 Abscess of the Liver. M. H. Nuckols, Richmond.

Indiana Medical Journal, Indianapolis.

August.

91 Essentials of Treatment of Acute Inflammation of the Middle Ear. A. R. Robson, Jr., Ft. Wayne.
92 Surgery of the Stomach. H. O. Painter, Indianapolis.
93 Remarks on Presenting the Historical Data Relating to Dr. Webb's Performance of the First Cholecystotomy. L. H. Dunning, Indianapolis.
94 Pathology of General Paresis. W. C. White, Indianapolis.

Cleveland Medical Journal.

August.

95 Gallstones. F. E. Bunts, Cleveland.
96 Epithelioma of the Vulva. H. Dittrick, Cleveland.
97 "School" Lateral Curvature. E. O. Pohl, Cleveland.
98 Castor Oil Treatment of Trifacial Neuralgia. G. Gill, North Ridgeville, Ohio.

Pacific Medical Journal, San Francisco.

August.

99 Finsen Light. F. C. Keck, San Francisco.
100 Poppy Culture and Opium Production in the United States. E. Wood, San Francisco.
101 Advantages of Life, Accident and Disease Insurance to the Medical Practitioner. W. Anderson, San Francisco.

Medical Fortnightly, St. Louis.

August 15.

102 Exophthalmic Goiter and Its Treatment. H. Stolte, Milwaukee, Wis.

August 30.

103 Treatment of Dysentery. J. B. Beatty, Philadelphia.
104 Electricity as a Therapeutic Agent. G. R. Neff, Farmington, Iowa.
105 Anatomic Eponyms. (Continued.) R. S. Gregg, Chicago.

Medical Standard, Chicago.

August.

106 Differential Diagnosis Between Appendicitis and Right Pyosalpinx or Salpingitis. L. Waltz, Chicago.
107 Diagnostic and Prognostic Value of the Diazo Reaction in Typhoid. J. McCoy, Columbus, Ind.
108 Treatment of Chronic Interstitial Nephritis. G. F. Butler, Chicago.
109 Individualizing in the Treatment of Urethral Gonorrhea—What Does It Mean? G. Kolischer and L. R. Schmidt, Chicago.

Milwaukee Medical Journal.

July.

110 Pneumonia. O. S. Cranright, East Troy, Wis.
111 Indications for Gallstone Operations. L. G. Nolte, Milwaukee.
112 Appendicitis During Pregnancy. E. W. Dodge, Marshfield, Wis.
113 Pathologic Review. D. R. Hopkinson, Milwaukee.

California State Journal of Medicine, San Francisco.

August.

114 Diagnosis of Typhoid Fever. C. M. Cooper, San Francisco.
115 Routine Treatment and Complications of Typhoid Fever. R. L. Wilbur.
116 Surgery (Immediate) of Perforated Typhoid Ulcer. F. H. C. Mattison, Pasadena.
117 Accessory Treatment of Typhoid Fever. G. B. Rowell, San Bernardino.
118 Prevention of Disease—Its Present Need. F. M. Bruner, Santa Ana.
119 Tubular Diarrhea or Membranous Colic. W. H. Flint, Santa Barbara.
120 Practical Application of Functional Diagnosis in Unilateral Kidney Lesions. M. Krotoszyner and W. P. Willard, San Francisco.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 9.

1 Poisoning by Fungi. C. B. Plowright.
2 *Clinical Effects of Ether Anesthesia on Renal Activity. H. Pringle, R. C. S. Maunsell and S. Pringle.
3 *Hemolytic and Hemosozic Serums. M. A. Buffer and M. Crendiropoulo.
4 *Case of Empyema of the Gall Bladder, with Unusual Symptoms. R. A. Stoney.
5 Discussion on Toothache, Neuralgia and Remote Affections of Dental Origin. J. S. R. Russell, J. H. Mummery, U. Pritchard, V. Horsley, H. Baldwin, R. A. Bogue, F. H. Huxley, J. L. Payne, W. A. Maggs, H. A. T. Fabricant and others.
6 Relationship of the Teeth to Disease in Early Life. E. Cautley.
7 Remote Affections Due to Teething in Childhood. R. Hutchinson.
8 Eye Affections of Dental Origin. F. J. Bennett.
9 Preliminary Note on the Treatment of Alveolar Cystitis (Rigg's Disease) by Means of Vaccine. K. W. Goadby.
10 Teeth as a Test of Age; Note on Eruption. S. Spokes.
11 Influence of Arranging Irregularly Placed Teeth into their Normal Positions. R. A. Bogue.
12 Vegetarianism and Its Effects on the Teeth. J. F. Rymer.
13 Obscure Case of Alveolar Abscess. F. L. Dodd.
14 Unusual Case of Necrosis of Jaw in a Child. A. Clarke.

2. **Effects of Ether on Renal Activity.**—The investigations made by the two Pringles and by Maunsell were undertaken with the object of determining clinically the influence of ether anesthesia on the secretion of urine. The method adopted was to take periods before, during and after the anesthesia, as follows: Period 1. Twenty-four hours, ending at 9 a. m. on morning of operation. Period 2. From 9 a. m. on the morning of operation till immediately preceding the administration of the anesthetic. Period 3. During the induction of anesthesia, ending with the abolition of corneal reflex. Period 4. First half-hour of complete anesthesia. Period 5. Second half-hour of complete anesthesia. Period 6. Third half-hour of complete anesthesia. Period 7. Six hours following anesthesia. Period 8. Twenty-four hours following Period 7. The bladder was emptied by catheter at the end of each period. Examinations were made in 10 cases. The ages of the patients ranged from 18 to 50. The operations done on them included myomectomy, ovariotomy, curettement, appendicectomy, excision of varicose veins, and removal of cervical glands. Period 1 was taken as the normal rate of secretion. Period 2 showed an increase in every case except one, the increase being accounted for by the nervous condition of the patient preceding operation. In Period 3 the secretion was increased in some cases and decreased in others. In Period 4 the effect of full anesthesia became evident, every case showing a great decrease, the average rate of secretion being only 23 per cent. above the normal. In Period 5 there was a further decrease, the average being only 55 per cent. of Period 6 and 13 per cent. of Period 1. In each of the two cases in which the anesthetic was continued for Period 6, the rate showed a further decrease. In Period 7 the rate of secretion rose, but never reached the normal, as indicated in Period 1. In Period 8 a slight decrease in the rate of secretion was seen in every case. In the majority of cases this decrease seemed to have no definite relation to either the amount of fluid taken or to the amount vomited during the thirty hours following operation. During the time of full anesthesia the excretion of the nitrogenous constituents of the urine was diminished to such an extent as to amount to practical suppression. This condition appears to increase the longer the anesthetic is continued. Furthermore, the kidney substance apparently recovers its power of secretion of water after the removal of the anesthetic more rapidly than it regains its power of nitrogenous excretion.

3. **Hemolytic and Hemosozic Serums.**—Ruffer and Crendiropoula summarize the results of their experiments as follows: 1. Bile contains at least two hemolysins or groups of hemolysins: (1) biliary hemolysin No. 1 (insoluble in alcohol), which produces a hemosozic serum when injected into rabbits; and (2) biliary hemolysin No. 2, which produces no hemosozic serum when injected. 2. Bile contains a hemosozic precipitate which, when injected into rabbits, produces a hemolytic serum. 3. The hemosozic precipitate added to bile never prevents completely the hemolysis produced by the bile. 4. The hemosozic precipitate neutralizes the hemolysin insoluble in alcohol (hemolysin No. 1), but not the hemolysins soluble in alcohol (hemolysin No. 2). 5. The hemosozic precipitate prevents the hemolytic action of a serum produced by the injection of bile.

4. **Empyema of the Gall Bladder.**—In the case reported by Stoney there was an empyema of the gall bladder, the result of the obstruction of the commencement of the cystic duct by calculus. Owing to the fact that the liver was enlarged so that the anterior edge, which was very thin, reached almost to the level of the umbilicus, though a dull note on percussion was only obtained for one and one-half inch below the costal

margin, the tumor was situated below the level of the umbilicus. In addition to this, the transverse colon was adherent to the under surface of the liver between its anterior sharp margin and the fundus of the gall bladder, causing a resonant note to be obtained on percussion between the hepatic dullness above and the gall bladder dullness below. As the result of these two factors a wrong diagnosis of appendicitis was made.

The Lancet, London.

September 9.

15 Evolution. G. H. Darwin.
16 Removal of a Large Pin from the Lower Lobe of the Lung by Transpleural Pneumotomy. R. H. Russell.
17 *Pathology and Treatment of Eclampsia. J. W. Byers.
18 Case of Tumor of the Cauda Equina Removed by Operation, with Remarks on the Diagnosis and Nature of Lesions in that Situation. W. R. Warrington.
19 *Appendicitis, the Quiescent Period. J. L. Thomas.
20 Family Tuberculosis; Tubes in Husband, Wife and Daughter. H. F. Trevelyan.
21 Simple Technic for the Bacterioscopic Examination of Sewage. W. H. C. Porter.
22 Five Cases of Tuberculosis Treated with Marmorek's Serum. H. F. Ramsay.
23 Case of Pneumonic Plague. H. B. Coburn.

17. **Treatment of Eclampsia.**—If the attack can not be warded off, Byers recommends the following method of treatment: "1. Treat the convulsions with morphin used subcutaneously. Keep the patient on her side, purge freely, use saline infusion, allow no liquids; in a word, as Gooch advised long ago, 'take care of the convulsions, and let the uterus take care of itself.' 2. Make an effort to eliminate the poison by purgation, hot packs and by saline infusion. 3. If labor has not set in, treat the convulsions, but do not induce premature action of the uterus. If labor has begun and the patient is in the second stage and the os dilated, give chloroform and deliver by forceps, if possible, or by turning. If, however, morphin and purgation with saline injections have been tried and the patient is not improving, dilate the cervix and deliver. 4. For the convulsions after delivery use morphin, purgatives and saline infusion. 5. In the prophylaxis of eclampsia rest, milk diet, warm baths and purgatives are the best methods of treatment."

19. **Appendicitis.**—Thomas has done 129 consecutive and successful Treves operations for appendicitis during the quiescent period. He advises removal of the appendix in cases of operation for ventral hernia following the opening of a perityphlitic abscess, and in cases of persistent thickening or induration after a first attack of appendicitis, and after two definite inflammatory attacks. The questions of diagnosis and operations are also discussed.

Journal of Tropical Medicine, London.

September 1.

24 Uncinaria and Other Intestinal Parasites in the West Indies. C. W. Branch, St. Vincent, W. I.
25 Pathology of the Yaws Nodule. J. M. Eat, Leeward Islands, W. I.
26 Similarity in Nature of Some of the Morphologic Characters and Habits of Insects. G. H. Fink.

Annales de l'Institut Pasteur, Paris.

Last indexed page 892.

27 (XIX, No. 6.) Effets expérimentaux de la toxine dysentérique sur le système nerveux. C. Dopter.
28 Bactériologie de l'appendicite. Perrone.
29 Les microbes dans l'industrie fromagère (cheese making). P. Mazé.
30 Microbes dans l'intestin du nourrisson (infants). A. Rodella.
31 (No. 7.) Sur quelques points relatifs à l'action pathogène de l'amibe dysentérique. C. Dopter.
32 *Bactériologie des gastro-entérites infectieuses. H. Pottevin.
33 D'une variété de tuberculose zoogléique et de ses rapports avec la pseudo morve (glanders). J. Cagnetto.
34 *Etudes sur le bacille typhique et le bacille de la peste (plague). Besredka.

32. **Infectious Gastroenteritis.**—Pottevin reports several new points of resemblance between the *B. enteriditis*, the paratyphoid and the hog cholera bacillus, and the H. bacillus. He accepts them as belonging to a group which he calls the Salmonella. In case of epidemics or epizootics, of a gastrointestinal character, more attention should be paid to the domestic animals as sheltering the germs. Many clinical cases of paratyphoid infection from cattle have probably been diagnosed as typhoid fever. Sheltered by the animal, the germs have been scattered in its dung, entailing infection of man in the rural districts; it may be transmitted to the city in milk, meat, vegetables or otherwise.

34. **Typhoid and Plague Vaccination.**—Besredka reports research on rabbits in the line of vaccination by means of an endotoxin and its antiendotoxin, both for typhoid fever and plague.

Revue de Chirurgie, Paris.

Last indexed page 625.

35 (XXV, No. 7.) *Considérations sur les plaies du canal thoracique dans la région cervicale. Vautrin.
36 Forward Displacement of Urethra.—La technique de la dilatation de l'urètre dans les hypospadias et autres vices de conformation et lesions de l'urètre. C. Beck (New York).
37 La luxation congénitale de la hanche. Anatomie pathologique. Lésions primordiales. P. Le Damany.
38 *Du danger des vapeurs chloroxycarboniques dans la chloroformisation. C. Armand and J. Bertier.
39 *Des anévrysmes artério-veineux de la sous-clavière. E. Pluyette and A. Bruneau.
40 Contribution à l'étude du tissu élastique dans les tumeurs. F. Bindi.
41 *De la tuberculose et des sténoses tuberculeuses du pylore. Ricard and Chevrier.
42 *De l'amputation abdomino-périnéale du rectum cancéreux. F. Gouilloud and G. Papon.

35. **Operative Injury of Thoracic Duct.**—Vautrin has observed 4 cases of operative injury of the thoracic duct during an operation. The results were insignificant in three of the cases, but in the other they were so serious that he writes this article to protest against the optimism which prevails in regard to injuries of this nature. He reviews the various methods of caring for such an injury in vogue, preferring, himself, to ligate the vessel after exposing it and testing the condition of its walls. This ligature may prove very difficult when the duct has to be sought behind the blood vessels, in the retrosternal region. This should be done at once, instead of waiting until the patient has become so much debilitated from the loss of lymph from the duct that he is scarcely able to bear any surgical intervention. In his fatal case the patient had had congestion of the lungs, dyspnea and tachycardia on previous occasions, which made him hesitate to resort to general anesthesia and to ligate the thoracic duct when it could have been done on the exposed, easily accessible portion. When he was finally compelled to this course, ligation was no longer possible except at a more inaccessible part of the duct, rendering the operation so grave that the patient finally succumbed. He advises ligature from the first, without wasting time on compression, if the walls of the duct are not too friable. It is a dangerous procedure in case of the absence of collaterals. When both these conditions are encountered the prognosis is necessarily bad.

38. **Danger from Illuminating Gas During Chloroform Anesthesia.**—Armand and Bertier state that the combustion of illuminating gas in a close room in which chloroform is being administered produces toxic gases rapidly fatal in sufficient quantity to birds and mammals. These gases reveal their presence by a whitish vapor, irritating to the mucosa and causing coughing, even in small amounts, and actually dangerous when the room is small and imperfectly ventilated. Certain individuals are more susceptible than others to the action of these irritating gases, and it is possible for the patient on the operating table to feel their effect more intensely than the surgeon or his aids, while, owing to the anesthesia, intoxication may occur without its onset being suggested by any symptoms until cyanosis and the respiratory syncope are noticed. The toxic gas generated is chloro-oxy-carbonic acid. It has a specific poisonous action on the blood. Armand is convinced that a number of "chloroform deaths" have been due to this cause.

39. **Treatment of Arteriovenous Aneurism of the Subclavian.**—Pluyette and Bruneau review the cases on record of operative treatment of subclavian aneurism. They are few in number and the results were far from encouraging. Three died out of the 7 patients operated on, while only 1 died among 12 patients not operated on. Of the 4 who survived the operation, 2 were left with functional impotence and the others were lost to sight immediately after. Expectant treatment seems preferable, they think, although menacing hemorrhage or other indication may force the surgeon's hand.

41. **Tuberculous Stenosis of the Pylorus.**—Ricard and Chevrier conclude this extensive study of tuberculosis of the pylorus with an account of two patients treated by gastroenterostomy. This brings the total number of authentic cases on record to

16. Gastroenterostomy has been done six times. It has the advantage, they think, over all other measures for the relief of this condition. It does not touch the focus, but leaves it in repose, and offers the most favorable conditions for its healing. Gastroduodenostomy would be the ideal physiologic technic, but it is more difficult, and practice is worth more than theory in such cases. They advocate posterior, transmesocolic gastroenterostomy.

42. **Abdominoperineal Amputation of Rectum.**—Goullioud and Fayasse comment on the greater danger of this operation in men than in women. Out of 31 cases in which this operation was performed, there were 11 deaths and 20 recoveries, but only 5 of the 15 men recovered, while all but 1 of the 16 women made an uneventful recovery. The mortality for the men was, therefore, 66.6 per cent., while it was only 6.2 per cent. for the women. One reason for this difference may be the closer connection between the urinary passages and the rectum in man. Once accepting the sacrifice of the sphincters, the abdominoperineal operation along the lines laid down by Quénu is a notable progress in the treatment of cancer of the rectum. It permits the removal of otherwise inoperable neoplasms.

Archiv f. Verdauungs-Krankheiten, Berlin.

Last indexed page 484.

43. *(XI. No. 2.) *Zur Diagnostik und Behandlung des Magengeschwüres (gastric ulcer). E. Wirsing.
44. *Zur Klinik der Isochymie und deren Behandlung. M. Einhorn (New York).
45. *Zur Methodik der quantitativen Nachweises von Fäulnis und Gährungsprodukten in den Fäces (putrefaction and fermentation products in stools). H. Ury.
46. Single and Specific Nature of Pancreas Trypsin.—Beitrag zur Frage der einheitlichen und spezifischen Natur des Pankreas-Trypsins. M. Ehrenreich.

43. **Gastric Ulcer.**—Wirsing relates comparative trials of the Lenhartz and von Leube-Ziemssen dietetic treatments of gastric ulcer. The Lenhartz technic has been described by Wagner, and was summarized in THE JOURNAL, Feb. 13, 1904, page 495. Wirsing found it distinctly superior to the other technics in cases of gastric ulcer with hemorrhage. It supplies more nourishment, and although it irritates the ulcer more than other technics, the advantages of more nourishment for the subjects debilitated by the hemorrhages, outbalance the local action on the ulcer. On the other hand, the von Leube-Ziemssen technic gave much better results in the cases without hemorrhage and consequent anemia. Wirsing's article is based on 320 cases of gastric ulcer. Only one-sixth of the patients were men. The Lenhartz method was followed in 43 cases, in half of which hemorrhage had been observed. The patients were given two raw whipped eggs and 20 c.c. of milk the first day, ice cold, increasing daily by one egg and 100 c.c. milk until they were taking eight eggs and one liter of milk during the twenty-four hours. After the sixth day chopped meat, butter, etc., are allowed in progressive amounts. Ice was applied to the stomach during the first seven to ten days in case of recent hemorrhages, and from 1 to 2 gm. of bismuth were given three times a day, sometimes with extract of bell. When there were no further pains, liq. ferr. alb. was administered, with Fowler's solution in case of severe anemia. The patients were kept in bed for from two to four weeks. Only a few patients found this diet disagreeable and the albumin had to be given in another form. The acidity approximated normal in the course of this treatment and all the patients gained in weight, but not to the extent of Wagner's patients, who averaged nearly 20 pounds. A circular of inquiry was sent to all the 320 patients who had been treated in the hospital, asking for details in regard to their present state of health, and answers were received from 106. They showed that 68 per cent. of the hemorrhagic patients had been permanently cured, and 53 per cent. of the non-hemorrhagic. It is possible that the hemorrhage provides more favorable conditions for the healing of the ulcer. Hematemesis had not occurred in any case in which there had been no hemorrhage before treatment. Sixty-seven of the patients stated that the ulcer had not been cured or had recurred, but as only 21 of these had sought medical aid later, it is evident that the troubles could not have been very serious. A number of other points are brought out in Wirsing's communication. Among them is the difficulty of diagnosing gastric ulcer, even when it is approaching perforation. Fifty-two of the patients had no pains. In others the pains did not correspond to the location of the ulcer, but were in the solar plexus or the pylorus. The painful point in the back to the left, near from the seventh to the tenth dorsal vertebræ, which Boas has found in one-third of all his cases, was noted in about half of Wirsing's patients. Pains in change of position were observed in one-third of all cases. Vomiting during the three hours after eating had occurred in 50 per cent. of all the cases. Hemorrhage was much more frequent among the male patients. In 3 cases the hemorrhage was the first symptom noted. Perforation occurred in four instances and immediate intervention saved two of the patients. In a fifth case the diagnosis had been merely acute gastritis. In the others the perforation was the first sign of serious trouble, occurring in one patient after a dance. In a fifth case the patient was not seen until nearly twelve hours after the perforation in a fasting stomach. As she seemed to be doing well no operation was attempted and she recovered.

44. **Treatment of Isochymia (Ectasia of Stomach).**—See THE JOURNAL, June 17, 1905, page 1962.

45. **Quantitative Tests of Products of Putrefaction and Fermentation in the Feces.**—Ury has been studying this subject for four years and published his results last spring in the *Deutsche med. Wochft.*, No. 19. He here further elaborates them and describes his technic in detail. His aim is to establish the normal standards for the feces in every respect, which he thinks he has accomplished in some directions. When normal standards are once known then the pathologic variations can be easily studied.

Berliner klinische Wochenschrift.

47. (XLII. No. 33, Aug. 14.) *Zur Operation der Tumoren des Kleinhirn-Brückenwinkels (cerebellum-pons angle). M. Borchardt.
48. *Interruption of Pregnancy on Account of Tuberculosis or Vomiting.—Ueber die künstliche Unterbrechung des Schwangerschaft wegen starken Erbrechens und Schwindsucht. F. Ruge.
49. Experimentelle Untersuchungen über die Wirkung einiger Stomachica auf die Magensaftsekretion (action on gastric secretions). T. Hoppe.
50. *Eine lebensbedrohende Intoxikation bei Anwendung 50 proc. Resorcin Paste. E. Kaiser.
51. *Investigation of Stomach Functions in Gynecologic Affections.—Ueber die Ergebnisse von Magenuntersuchungen bei Frauenleiden. H. Winkler.
52. Zwei Fälle von congenitaler Parese des Musculus rectus inferior, der eine durch Operation geheilt. G. Gutmann.
53. *Zur Diagnostik des Magenschwindels. V. Bartenstein.
54. Prophylaxe und Abortiv-Behandlung der Gonorrhe. J. Vogel.

47. **Tumors in Cerebellar-Pons Angle.**—Borchardt describes a case of fibrosarcoma in the angle between cerebellum and pons, which was removed without much trouble. The patient died the following day, probably from the effects of compression by coagula left from two preceding ineffectual attempts to reach the tumor, interrupted on account of severe hemorrhage and the extreme weakness of the patient. The conditions of successful removal of a tumor at this point are a good constitution on the part of the patient, distinct encapsulation of the tumor, which must not be too deeply situated, and absence of much hemorrhage. If the tumor had been a cyst or cholesteatoma the extirpation would probably have been successful. Intervention should be prompt, before loss of vision. The symptoms in the case described had been headache, vomiting, vertigo, uncertain gait, choked disc, attacks of apathy and trismus, deviation of head, slight acceleration of pulse, subjective sounds in the ears, etc.

48. **Artificial Interruption of Pregnancy in Tuberculosis and Uncontrollable Vomiting.**—Ruge summarizes his views in the statement that in advanced cases of tuberculosis, the interests of the child should be regarded as paramount, while in incipient tuberculosis the interests of the mother should take precedence. In case of uncontrollable vomiting the general condition is the criterion as to whether to interfere or not. If in spite of emaciation the patient still feels well and strong, the pregnancy should not be disturbed, but when loss of strength becomes apparent, consideration for the child, he thinks, should yield to the mother's interests.

50. **Intoxication from External Use of Resorcin.**—A man of 29 was treated with applications of a 50 per cent. resorcin paste on account of lupus, about 100 gm. of the paste being rub-

bed into the two patches. In a few minutes he began to exhibit symptoms like those noted when resorcin has been taken internally, convulsions, lethargy, etc. Consciousness was not regained for an hour or more, but recovery was complete by the fourth day.

51. **Stomach Secretions in Gynecologic Affections.**—Winkler found evidences of hypochlorhydria in all his severer gynecologic cases. The measures directed against the gynecologic affection had to be supplemented by treatment of the subacidity. He thinks that subacidity should be assumed and treated in all gynecologic cases, in the absence of evidence to the contrary. Displacement of the genital organs and of the stomach is probably the result of a single cause, and motor insufficiency generally accompanies the gastroptosis which he noted in 18 out of 31 gynecologic patients examined. He tabulates 41 gynecologic cases, free from any stomach affection, in which he noted secretory anomalies in the majority, and almost invariably in the line of subacidity.

53. **Chemistry of Stomach.**—Bartenstein points out a source of error in chemical examinations of the stomach. He has found that the stomach contents do not form a homogeneous mass, but that the acidity of different portions varies within wide limits. The total acidity of the stomach contents—as mixed in a jar after withdrawal—may be only 60, when in reality it may be 90 in some parts of the stomach and 30 in others. The hyperacid regions may react with the symptoms of hyperchlorhydria, when chemical tests in the jar would seem to exclude such a condition of hyperacidity. Tests based on examination of only a small portion of the stomach contents are liable to give erroneous conclusions.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

55 (XXXI, No. 33, Aug. 17.) *Diagnose und Therapie der nervösen Magendarmerkrankungen (gastrointestinal affections). I. Boas.

56 Sind Toxine Fermente? L. v. Liebermann.

57 *Early Audibility of Fetal Heart Sounds.—Weitere Erfahrungen über die frühzeitige Hörbarkeit der fötalen Herztöne. O. Sarwey.

58 Ueber einen gelegentlichen Erreger von Sepsis puerperalis (occasional agent). E. Martini.

59 Ueber experimentell bei Händen erzeugte Tumoren nach einer Krebsübertragung vom menschen (cancers on dogs). C. Lewin.

60 Ueber den Metatarsus varus. C. Helbing.

61 Case for Examination of Urine.—Ein neues Besteck für Harnuntersuchungen. Rubens.

62 Ueber Cylindrurie und Nephritis. M. Gentzen.

63 Ueber "nikotin-freien" Tabak. Ratner.

64 (No. 34.) Military Surgery in Russo-Japanese War.—Kriegschirurgische Erfahrungen, etc. Schäfer.

65 Ueber abnorme Epithelisierung und traumatische Epithel-Cysten. Pels-Leusden.

66 Serum Cure of Case of Tuberculous Conjunctivitis.—Heilung eines Falles von Augen-Tuberkulose durch Marmorek's Serum. Schwartz.

67 Location and Opening of Deep-lying Abscesses at Base of Tongue by Operation from Without.—Ueber den Sitz und die Eröffnung tiefliegender Abscesse der Gegend der Zungenbasis und des angrenzenden Pharynxabschnittes durch Operation von aussen. J. A. Killian.

68 Ein weiterer Sprechsten-Befund bei hereditärer Lues. Reichmann.

69 Instruments and Technic for Curetting Male Bladder, in Case of Chronic Cystitis, without Opening It.—Anschabung der männlichen Harnblase bei chron. Cystitis ohne deren Öffnung. Strauss.

70 *Immunization Cure of Pulmonary Tuberculosis with Bovine Tuberculin.—Ein neues immunisierendes Heilverfahren der Lungenschwindsucht mit Perlsucht-Tuberculin. C. Spengler (Davos, Switzerland).

55. **Nervous Gastrointestinal Affections.**—Boas groups nervous gastrointestinal affections as those with a single or with several symptoms. The single symptoms may vary from time to time, but this group is much more easily diagnosed than the cases with several symptoms. Besides the anamnesis, the course of the affection is important for diagnosing, the striking, motiveless intermissions and leaps and the absolute independence between the disturbances and the diet, while the disturbances are dependent to the last degree on emotions, overexertion, changes of air, etc. The physician, not the medicine, is what cures in these cases. A change of environment is one of the most important measures, but scarcely less important is the principle gradually to spur the sound but irritable digestive tract to maximal work. Most of these nervous gastrointestinal affections lead to under-nourishment of the individual. Institution treatment is almost indispensable, and after dismissal the patients must be warned to keep away from business for several months and to continue the diet found most suitable. They should keep watch of their weight every week, and whenever it begins to go down, another brief course of dietetic treatment should be commenced to regain what is lost. Electrotherapy, massage, hydrotherapy and movements are frequently applied without individualizing, so that the full benefit is not derived from them. Local procedures have never done much good in his experience, with the exception of faradization of the rectum, which he has found invaluable in habitual obstipation from atony. Fashionable watering places are contraindicated for nervous gastrointestinal troubles; such patients require quiet and freedom from strain. Drugs should not be given much, as these patients should be taught that hygiene and a regular and rational mode of life are the main factors in getting and keeping well.

57. **Fetal Heart Sounds Audible at Thirteenth Week.**—Sarwey reiterates his former assertions in regard to the possibility of auscultating the fetal heart sounds from the thirteenth week of the pregnancy. They become perceptible almost always at the same spot in the horizontal plane of the internal os. The conditions for successful auscultation are a trained ear, a perfectly quiet room, great patience on the part of the examiner, preliminary complete emptying of the bladder with the catheter, and approximation of the anterior wall of the uterus to the anterior abdominal wall, which must be pushed in deep with the stethoscope, just back of the symphysis.

70. **Immunization Treatment of Pulmonary Tuberculosis with Bovine Tuberculin.**—Spengler's previous communications on the immunization treatment of tuberculous subjects with tuberculin made from bovine material have been summarized in these columns as published. He here reports the particulars of the agglutinating property acquired in 80 cases of tuberculosis in which the patients had been immunized with his perlsucht tuberculin. Koch found agglutination at 1-25 and 1-75 in 51 out of 74 cases treated with his tuberculin, the majority of the rest agglutinating at 1-75 to 1-300. Spengler with his perlsucht tuberculin found agglutination from 1-300 to 1-3,000 in 60 out of the 80 subjects, and from 1-100 to 1-300 in the rest. The most rapid increase in the agglutinating property and the most intense bactericidal action were noted in patients under treatment with the tuberculin when the edematous-inflammatory reaction at the point of injection was allowed to subside completely before another injection was attempted. This is especially important for avoidance of organ reactions in case of tuberculous nephritis, pseudo-asthma and in tuberculosis of intestines, larynx or ears. He found the systematic administration of iodin useful in promoting the formation of agglutinins. All the patients with tuberculosis in whom the disease dated from youth made much better progress in agglutination and curative properties when supplemented by the use of iodin. Less in all its manifestations has an inhibiting influence on the increase of the agglutinating properties, as also severe physical or intellectual work. General hygienic measures and mode of life favor the acquirement of agglutinating properties, while depressing circumstances, weak heart, underfeeding and overworking act against it. A small number of tuberculous and phthisic patients were unable to tolerate the perlsucht tuberculin, the infection in their case being probably of bovine tuberculosis origin. Spengler adds, in conclusion, that he supplies his perlsucht tuberculin only to those physicians who have had special training in the specific treatment of tuberculosis. He agrees with Petruschky that the introduction of tuberculin treatment requires special training beforehand.

Münchener med. Wochenschrift, Munich.

71 (LII, No. 33, Aug. 15.) *Ueber ein Embryom der Wade (of the calf). E. Fischer.

72 Transmission of Foot and Mouth Disease to Rabbits.—Bericht über gelungene Uebertragung der Maul- und Klauenseuche auf Kaninchen. J. Siegel.

73 Ueber eine rätselhafte Drüsenerkrankung (puzzling gland affection). J. Möbius.

74 Shape of Bladder in Roentgen Picture.—Die Gestalt der menschlichen Harnblase im Röntgenbilde. F. Voelcker and A. Lichtenberg.

75 *Determination of Indican in Urine.—Eine Methodik des Indikannachweises im Harn. A. Gürber.

76 *Determination of Hematin in Feces.—Ueber den Nachweis von Blutfarbstoff in den Fäces. M. Siegel.

77 Die Plaut-Vincent'sche Angina. P. Reiche.

78 Stomatitis ulcerosa und Angina Vincenti. E. Marian.

79 Zur Aetiologie und Therapie des Heufiebers (hay fever). R. Mohr.
80 Gewichtsextension der Haut (weight extension of skin). Frey.
81 Needle for Suturing Bone.—Eine neue Nadelart zur Ausführung der Knochennaht. O. Klauber.

71. **Embryoma on Calf of Leg.**—Fischer's patient was a man of 57 who had noticed the growth of a tumor in the calf for about six years. He succumbed to the progress of miliary tuberculosis, and examination of the tumor showed it to be of congenital origin. None of the theories in vogue for the origin of congenital tumors harmonize with the findings in this case, except the Marchand-Bonnet blastomere theory, but this would explain all the findings in this typical embryoma. It contained a great variety of derivates from all the three blastodermic layers, including intestine and gland formations of all kinds. The germ remained latent for half a century before it commenced to proliferate, and it finally assumed the characteristics of a myxosarcoma. Fischer asks whether the sarcomatous degeneration could have been from an exogenous cause, or whether it was a mere coincidence that the sarcoma should happen to settle on the embryoma.

75. **Determination of Indican in Urine.**—Gürber uses cumic acid instead of calcium or ferric chlorid in the Jaffé test for indican in the urine. A reagent glass is filled one-third full of urine and the glass is then filled with a concentrated solution of hydrochloric acid, and two or three drops of a 1 per cent. solution of cumic acid are added. In a few seconds the fluid turns violet or almost pure blue, according to the proportion of indican. Cumic acid is much more reliable than the other substances previously used for the test.

76. **Determination of Hematin in Feces.**—Siegel relates that numerous trials were made in Müller's clinic at Munich of the guaiac and benzidin tests for "occult" blood in the feces. The general conclusions are to the effect that negative findings are almost positive evidence of the absence of blood. Positive findings testify to the presence of blood if the ingestion of meat or of drugs can be excluded. The spectroscope affords the best control test.

Zeitschrift f. Geb. und Gynäkologie, Stuttgart.

Last indexed XLIV, page 320.

82 (LV, Olshausen Festschrift). *Resultate meiner Ovariotomien in 22 Jahren. H. Fritsch.
83 *Indikationen und Kontraindikationen der Bauchhöhlen-drainage nach der Laparotomie. O. Küstner.
84 *Wissenschaftliche Begründung der Indikationen zur Myomoperation. G. Winter.
85 *Die Ventrifixura uteri bei Verlagerungen des Uterus. M. Hofmeier.
86 Zur Technik der abdominalen Exstirpation des karzinomatösen Uterus. E. Bumm.
87 Die Beteiligung der Harnwege beim Uterus-Karzinom und ihre operative Behandlung (involvement of urinary passages). Koblanck.
88 Borderland Questions.—Auf Grenzgebieten. C. Ruge.
89 *Die Pyelonephritis gravidarum et puerperarum. E. Opitz.
90 *Female Bladder and Genital Affections.—Weibliche Blase und Genitalerkrankungen. W. Zangemeister.
91 *Beitrag zur Klinik und zur chirurgischen Behandlung chronischentzündlicher Adnex-Erkrankungen (chronic inflammation of the adnexa). M. Henkel.
92 Eine seltene Missbildung des Urogenitalsystems eines totgeborenen Mädchens (rare deformity in girl). O. Ihl.
93 *Welche Ventrifixations-Methoden führten zu Geburtsstörungen und zu Hernie? (Which methods are followed by disturbance?) P. Scegerth.
94 *Ueber Geburt und Trennung von Xiphopagen. R. Jolly.
95 *Die Spontanruptur in der alten Kaiserschnittnarbe (in old Cesarean scar). F. Prüsmann.
96 *Zur Pathologie der Thrombose der Vena mesenterica superior. J. Amon.
97 *Ueber intestinale Autointoxikation nach Laparotomie. C. Keller.
98 *Pathologic Desires to Urinate.—Die Ursachen des pathologischen Harndranges beim Weibe, insbesondere Cystitis colli und Periurethritis, sowie deren Behandlung. R. Knorr.
99 Myome und Ovarialtumoren als Indikation zum Kaiserschnitt (Cesarean section). W. Kallmorgen.
100 Die abdominelle Total-exstirpation des kreisenden Uterus (sub partu). O. Gutbrod.
101 Tubal Twin Gestation.—Tubare Zwillingsschwangerschaft mit zwei Eiern verschiedener Grösse. R. Sanftor.
102 Forceps in Breech Presentation.—Zange am Steiss. C. J. Gauss.

92. **Twenty-two Years' Experience with Ovariotomy.**—Fritsch opens the stately list of articles all dedicated to Olshausen on the occasion of his seventieth birthday. The volume is a bulky one of 528 pages, with colored plates, and contains twenty-one articles. Fritsch states that he has performed ovariotomy on 1,000 patients and that 70 succumbed. The cause of death was after-hemorrhage from loosening of a ligature in 2 cases, ileus in 8, cancer in 7, contracted kidney in 2, pyelonephritis in 2, shock in the first twenty-four hours in 12, and peritonitis with purulent ovarian cysts in 6. The proportion of deaths from sepsis alone amounted to 2.23 per cent. In 48 cases the tumor was malignant.

83. **Indications and Contraindications for Drainage After Laparotomy.**—Küstner emphasizes that the indications for tamponing after a laparotomy are becoming more and more restricted, but that in certain cases it is still indispensable. This is especially the case when a pus pocket has to be opened secondarily, or when the intestine and bladder have been injured; also when parenchymatous hemorrhage can not be arrested by any other means, especially after detachment of adherent tumors or other lesions on the posterior sheets of the broad ligaments and peritoneum in the Douglas cul-de-sac.

84. **Indications for Myoma Operations.**—Winter's experience includes 1,000 cases of myoma in seven years. Hemorrhage occurred in about two-thirds of all his cases; it generally preceded from submucous myomata. Pure menorrhagia was more frequent than pure metrorrhagia; the latter suggests the possibility of malignant disease or secondary degeneration of the myoma or a submucous growth. Hemorrhage in the menopause is generally due to complication with malignant disease or secondary degeneration or submucous development of the myoma. Conservative treatment is indicated in such cases only when these three conditions can be positively excluded. In case of pure menorrhagia, the guide to operation should be the severity of the anemia. Anemia with even 30 per cent. hemoglobin does not contraindicate an operation. Ergot was successful only in case of pure interstitial myomata, not larger than a child's head. Curettement of the uterus is scarcely liable to be successful except in case of subserous and small interstitial myomata. As the outcome is dubious, curettement should never be attempted in case of severe anemia. Submucous myomata with hemorrhage should be extirpated. Subserous myomata cause pain more often than other kinds except those hindered from developing freely into the abdominal cavity. Pure dysmenorrhea can be induced by a myoma alone, especially in case of submucous development. He warns that psychoses and general neuroses can not be ascribed to an accompanying myoma, and are not improved by its removal. Excessively large myomata ought to be removed, he thinks, if they interfere with the general health, even if they cause no symptoms, as also subserous tumors with a small pedicle; but otherwise not if they cause no symptoms.

85. **Ventrofixation.**—Hofmeier has examined 100 women long after he had performed ventrofixation, and is much pleased with the results of his intervention.

89. **Pyelonephritis in Pregnancy.**—Opitz has observed 84 cases of inflammation of the renal pelvis during pregnancy or the puerperium, and reviews the lessons learned from this experience and from the extensive literature on the subject.

90. **Affections of Female Bladder and Genitals.**—Zangemeister has tried Vocleker and Joseph's method of chromocystoscopy (described in The Journal, XLII, page 1326), and found it extremely reliable. He is surprised that gynecologists do not pay more attention to cystoscope findings. They are important in diagnosis and also as indications for operation and prognosis. He describes the behavior of the bladder in cases of cervix carcinoma, of myomata and other tumors, and discusses further the cystocele accompanying prolapse and the conditions in case of vesicovaginal fistula.

91. **Treatment of Chronic Inflammation of the Adnexa.**—This communication from Olshausen's clinic does not draw a very favorable picture of the remote results of surgical intervention in the cases of chronic inflammation of the adnexa operated on there. Many of the women presented exudates, inflammatory changes in the organs left or displacement of the uterus. The immediate results are no criterion as to the results later. Exploratory puncture was found useful and harmless. Surgical measures should not be used until after failure of medical. Henkel considers it advisable to remove both tubes, as the chronic inflammation renders pregnancy improbable, but the physiologic function of uterus and ovaries should be respected.

V 4
190

93. Ventrofixation and Disturbances Later.—Sesgarts discusses which methods of ventrofixation are liable to entail disturbances in childbirth or ileus, citing 40 cases from the literature. He thinks that Olshausen's technic offers the best prospects of successful outcome. He is careful to suture the uterus only at the points of insertion of the tubes. The uterus thus fastened can develop afterward normally during a pregnancy, undisturbed by the fixation at the point of attachment of the tubes. Ileus after ventrofixation is recorded in four instances. The fixation was median in each.

94. Delivery and Separation of Xiphopagus.—Jolly describes the birth of a xiphopagus and subsequent efforts to separate the living from still-born twin. The sternum and liver of each were continuous. Neither of the twins survived.

95. Spontaneous Rupture in Old Cesarean Cicatrix.—Prüsman adds another to the seven cases on record. In his case the woman had been delivered twice by Cesarean section. During the third pregnancy the integrity of the cicatrix had been determined in the course of an operation for hernia, but still it ruptured spontaneously two weeks before term. The patient was saved by prompt operation, excising the ruptured parts. The mucosa had evidently grown into the Cesarean cicatrix and undergone decidual changes, thus weakening the wall.

96. Thrombosis of Superior Mesenteric Vein.—Symptoms of ileus should suggest the possibility of thrombosis of the superior mesenteric vein when the blood has previously displayed increased coagulability by thrombosis elsewhere, or it is induced by the puerperium; also in case of congestion in the portal vein or artificial thrombus formation by operations in this region or suppurative processes. The discovery of a resistant tumor with intestinal resonance will sometimes aid in differentiation from other forms of ileus. The early appearance of ascites suggests occlusion of the vein. Amos' article is based on two cases.

97. Autointoxication After Laparotomies.—Keller relates the history of two patients who developed a febrile symptom-complex after a laparotomy in which no injury had been done to the intestines. It presented the classical picture of intoxication from intestinal putrefactions. Both patients had been constipated before the operation, and all symptoms subsided after a purgative. The case illustrates the danger from opium after a laparotomy.

98. Pathologic Desires to Urinate and Cystitis in Women.—Knorr states that one in every five of his gynecologic patients have complained of disturbances in urination, and one in every eight have exhibited chronic cystitis of the neck of the bladder. In two-thirds of all the cases with urinary disturbances, cystitis of the neck was evident. The cystitis may be attributed to infection, to venous congestion or to hyperplasia. The cystoscope is an invaluable diagnostic aid in gynecology. He describes the local findings in cystitis and also his method of local treatment, cauterizing the parts with 1 per cent. solution of silver nitrate every two or three days. An abnormally small bladder can be stretched to regain its normal capacity.

Gazzetta degli Ospedali, Milan.

Last indexed page 748.

103 (XXVI, No. 82.) *Catarrh of Bladder in Pulmonary Tuberculosis.—Sul catarro vescicale nella tubercolosi del polmone. A. Campani and G. Formaggini.

104 Atassia-vertigo in Brain Lesions.—Fenomeno atassico-vertiginoso in lesioni cerebrali-extracerebellari. S. Mircoli.

105 *Slow Pulse.—Polso lento permanente. A. Perugia.

106 (No. 82.) *Artrite multipla pneumococcica. Cura comune e sieroterapia della polmonite. E. De Renzi.

107 (No. 85.) *Sulla presenza dello spirochaete pallido nel sangue e nelle manifestazioni secondarie del sifilitic. I. Bandi and F. Simonelli.

108 Anemia perniciosa progressiva da microcecco tetragono. F. Arullani.

109 L'iodico colorimetrico di stimanzione del iodio nei diversi impieghi del iodari (colorimetric tests of therapeutic iodin). G. Calapaneotis.

110 (No. 83.) *Diagnosi differenziale tra essudati e trasudati (exudates and transudates). E. Tedeschi.

111 *Relations Between Flora and Uric Acid in Human Intestine.—Interno ai rapporti tra flora e acido urico nell' intestino dell' uomo. M. Carletti and L. Fasorico.

112 (No. 91.) Pancreatite primitiva bonigna. A. Tutti.

113 Alterazioni anatomiche nella infezione da Tripanosoma. G. Fasoli.

114 Action of Tuberculous Toxins on Development of Fungi.—Azione che esercitano i veleni tubercolari sullo sviluppo di certe muffe. M. Sciallero.

115 (No. 84.) 15 Cases of Tuberculosis Treated with Serotherapy and Immunization.—A. Gasparini.

116 La genitina nella cura delle emorragie e degli aneurisme. M. Landolfi.

117 Il chloroformio en in diplococcosis e nella tubercolosi sperimentale. A. Campani.

118 (No. 87.) Heart Sounds in Acute Rheumatism.—Sul significato dei rumori cardiaci di soffio che si manifestano nel corso della poliartrite reumatica acuta. A. Rossi.

119 *Le levulosuria alimentare nelle malattie infettive. S. Rosanoff.

120 Contributo clinico ed istogenetico al cancro primitivo del fegato (cancer of liver). F. Bindi.

121 La diagnosi del carcinoma gastrico per mezzo della "Precipitina." D. Maragliano.

122 La etiologia del colera infantile e la necessità di provvedimenti sociali per attenuarne i danni. V. Tedeschi.

123 *Di un elemento morfologico del sedimento urinario non ancora differenziato. R. U. Pittaluga.

124 (No. 100.) *I nucleoproteidi nella etiologia della cirrosi. T. Silvestri.

125 Curability or Latency of Tubercular Meningitis.—Sopra un caso di meningite tubercolare. E. Tedeschi.

126 Asciti essudative. A. Bacchesco.

127 (No. 103.) La malattia del sonno (sleeping sickness). C. Turchetti.

128 (No. 102.) *Metodo rapido di colorazione della spirochaete pallida. P. Simonelli.

129 (No. 105.) *Le difese naturali ed artificiali dell' uomo contro la infezione tubercolare (defenses of man). F. Pignat.

130 Pleuriti nel corso dell' infezione tifoidea. A. Barbesco. Two cases.

131 La cura raffredo embulatoria dell' idropsia. A. Magrassi.

132 Osservazioni sperimentali sulla guarigione delle pleuriti infiammatorie (curability). G. Guyot.

103. Catarrh of Bladder in Pulmonary Tuberculosis.—Campani has noticed symptoms of catarrh of the bladder in a number of cases of early tuberculosis. He presents arguments to prove that this catarrhal condition of the bladder is the result of the lesser acidity of the urine in the protuberculous stage and in incipient tuberculosis. This harmonizes with the views recently advanced by some writers that hypoacidity is an accompaniment of and favors the development of tuberculosis, and accompanies it in its early stages. The hypoacidity further favors the development of pseudo-phosphaturia and cystitis, and is a depressing element for the organism in general. Alkalines should not be administered to such patients, and their diet should be regulated to prevent the possibility of "alkaline cachexia," excluding more or less the starches and vegetables.

105. Permanent Slow Pulse.—The cause of the chronic slow pulse, 30 beats to the minute, in the case described, was evidently a lesion in the central nervous system, affecting the functions of the centers that preside over the action of the heart. The patient was a man of 73, a paranoiac and paralytic for several years.

106. Serum Treatment of Pneumococcus Arthritis.—De Renzi's patient had apparently recovered from his pneumonia, but within a week of defervescence symptoms of acute articular rheumatism developed. It is the first experience of the kind in 279 cases of pneumonia in his service. He advocates in treatment of pneumonia abundance of fresh air, remarking that the mortality from pneumonia in badly ventilated rooms is enormous. He insists further on the necessity of nourishing food, giving his patients three pints of milk a day and two eggs. They escape the depression of the heart noted elsewhere, or it is very brief. He is further convinced of the necessity for alcohol in pneumonia. One of his first cases was a patient with a serious cardiac defect who had been doomed to death by other physicians, but he recovered with the use of alcohol. De Renzi gives pure alcohol, not wine, as he is thus able to measure the amount and can rely on its purity. He gives it in the formula:

℞. Alcohol purissimo	Gl	60
Water	Cl	500
Syrup of bitter orange peel	Gl	30

From 30 to 25 gm. are given during the day, with larger doses to persons accustomed to the use of alcohol. He is convinced that serum treatment is a valuable adjuvant and hopes that physicians generally will pay more attention to the serotherapy of pneumonia in future. From his experience with 28 cases treated with serum he asserts that the general health showed marked improvement; the temperature declined and resolution occurred by lysis instead of the usual crisis. The local changes did not appear to be modified by the serum, but as the general health showed such marked improvement the local manifestations seemed much less important in comparison. Besides the tonic action of the serum, it aids in raising

the blood pressure. In his clinic, the blood pressure has never been low for longer than two or three days. He ascribes this to his abundant feeding and the use of alcohol, supplemented by the serum treatment.

107. Spirochetæ in Syphilis.—Bandi found the *Spirochæta pallida* in 3 out of 5 cases of secondary syphilis in conditions that excluded the possibility of external contamination.

110. Differentiation of Exudates and Effusions.—Tedeschi applies the "biologic precipitation test" for the differentiation of transudates. He obtains a prepared serum from rabbits injected with egg albumin, and then has the patient eat several eggs fasting. The fluid to be examined, mixed with the prepared serum, gives the specific precipitation if it is a transudate, while there is no precipitation in case of an exudate, as a rule.

111. Relations Between Flora and Uric Acid in Intestines.—Caristti found that the uric acid and the bacteria in the intestines became both reduced on a milk diet and after ingestion of lemon juice, but with nothing to suggest cause and effect between the flora and the uric acid. On the other hand, when 500 gm. of calf's thymus was ingested for three days in succession, in place of other meat, no uric acid could be detected in the feces of one of the patients, while the number of bacteria increased to uncountable proportions. In the second patient the uric acid subsided to traces and the bacteria became very much more numerous, but the change was not so extreme as in the other. The conclusion seems evident that the proliferation of the bacteria on the thymus diet had some connection with the vanishing of the uric acid from the stools.

119. Alimentary Levulosuria in Infectious Diseases.—Rebaudi concludes from his experiences with the alimentary levulosuria test that it is the most delicate and the most reliable one at our disposal for revealing even the slightest functional disturbance in the liver cells. The degree and intensity of the disturbance can be estimated from the amount of levulose found in the urine. Intercurrent bacterial intoxication may first render manifest a latent disturbance in the liver.

123. New Morphologic Element in Urine.—Fittipaldi gives illustrations of what he believes to be a hitherto undifferentiated morphologic element in the urine. He calls it the "miliary tube cast," and states that it takes the eosin and other stains while the pseudo-casts of sodium oxalate, with which it might be confounded, are dissolved by acetic acid and do not take these stains. He found these new casts in certain cases of nephritis.

124. Autogenerated Nucleoproteids in Etiology of Cirrhosis. —Certain Italian experimenters proclaim that some of the albumin ingested, such as that in meat, is liable to escape the assimilating action of the gastrointestinal mucosa and to make its way into the circulation and to induce the formation of antibodies. Silvestri argues that if this heterogeneous albumin enters the circulation in unusual amounts, the organism is a prey to autointoxication of a much more complex nature than generally supposed. The heterogeneous albumin reaches the liver practically unmodified, with the other waste products in the blood, and in time exerts a seriously injurious action on it. The damaged liver cells in turn launch new nucleoproteids into the circulation whose effects are superadded to those of the primal cause. The future will reveal the importance of the part played by these factors in inflammation of the liver, but experimental research to date indicates that it is a very important one. The injurious action of the nucleoproteids in the circulation is similar to that of intoxication from phosphorus, alcohol and other substances which we know are capable of inducing cirrhosis. This conception explains certain cases of cirrhosis in which no etiologic factor can be discovered. If we accept the assumption of the existence of these auto-hepatolytins, we can understand that some ordinary occurrence in a predisposed individual may influence the liver to an extent that will entail true hepatitis in time. A diseased organ may be injurious to the organism not only from the lack of its normal functioning, but also because it launches into the circulation certain poisons which, besides injuring the entire economy, have a special destructive action on the organ in which they were elaborated. This conception is sustained by the beneficial results of splenectomy in certain affections, not only in Banti's disease, but in others. The improvement obtained in cirrhosis by organ treatment with liver tissue and in Banti's disease with spleen tissue, finds a plausible explanation in the hypothesis that the organ therapy, instead of merely substituting the diseased organ, is able to induce in it the production of antisubstances capable of neutralizing or precipitating the noxious substances turned out by the diseased organ or organs.

128. Stain for Spirochetes.—Simonelli and Bandi recommend the May Grünwald stain as far superior to others for detection of the *Spirochæta pallida*; 1 gm. of eosin and 1 gm. of methylene blue are dissolved separately in 1,000 c.c. of water each. The two solutions are then mixed and set aside for from two to seven days. The fluid is then filtered and the sediment left in the filter is rinsed again and again until the fluid comes away clear. It is then dried and dissolved in a saturated solution of pure methyl alcohol. A few drops of the stain thus made are added to the dried specimen and left in contact for from four to ten seconds. The specimen is then rinsed, dried and mounted in balsam. This stains the spirochetes while leaving the other elements in the specimen almost colorless.

129. Protection Against Tuberculosis.—Figari asserts his conviction that the only effectual means of protecting man against tuberculosis is by immunization carried on systematically and on a large scale.

Nordiskt Medicinskt Arkiv, Stockholm.

Last indexed XLIV, page 952.

123 (XXXVIII, Internal Medicine, No. 1.) Tape Worm in Denmark.—Verbreitung von Bandwürmern beim Menschen in Dänemark. H. Krabbe.

134 Fall von Tumor mediastini, verbunden mit blutigen Kollapserscheinungen. K. Thilo.

Books Received

THE PHARMACOPŒIA OF THE UNITED STATES OF AMERICA. Eighth Decennial Revision. By authority of the United States Pharmacopœial Convention held at Washington, 1900. Revised by the Committee of Revision and Published by the Board of Trustees. Cloth. Pp. 602. Price, $1.50. Philadelphia: P. Blakiston's Son & Co.

LECTURES ON THE PRINCIPLES OF SURGERY. Delivered at the University of Michigan, by C. B. Nancrede, A.M., M.D., LL.D., with an Appendix containing a résumé of the Principal Views Held Concerning Inflammation, by W. A. Spitzka, A.B., M.D. Second Edition. Cloth. Pp. 407. Price, $2.50 net. Philadelphia: W. B. Saunders & Co., 1905.

A TEXT BOOK OF CLINICAL DIAGNOSIS by Laboratory Methods. For the Use of Students, Practitioners and Laboratory Workers. By L. N. Baxter, A.M., M.D. Second Edition. 220 Illustrations. Cloth. Pp. 502. Price, $4 net. Philadelphia: W. B. Saunders & Co., 1905.

ATLAS AND EPITOME OF DISEASES OF THE SKIN, by F. Mracek. Authorized Translation from the German. Second Edition, with 77 colored Illustrations. Edited by H. W. Stelwagon, M.D., Ph.D. Cloth. Pp. 272. Price $4 net. Philadelphia: W. B. Saunders & Co., 1905.

REPORT OF WORKING PARTY No. 2, Yellow Fever Institute. Experimental Studies in Yellow Fever and Malaria at Vera Cruz, Mexico, by M. J. Rossman, H. B. Parker and others. May, 1904. Paper. Pp. 101. Washington: Government Printing Office, 1905.

TEXT-BOOK OF CHEMISTRY. For the Use of Students and Practitioners of Medicine, Dentistry and Pharmacy. By W. B. Jones, M.D., Ph.G. Cloth. Pp. 462. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Co., 1905.

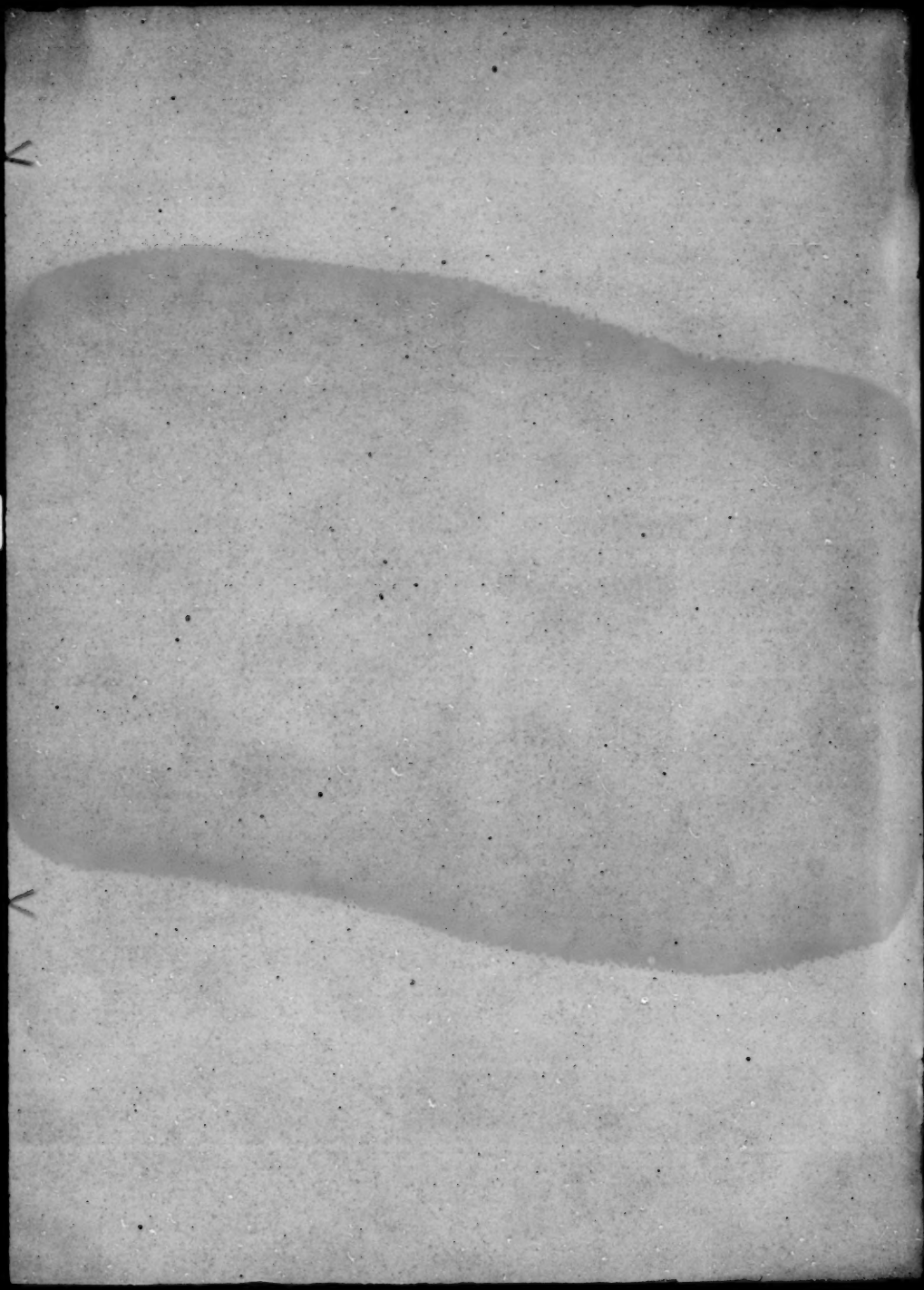
MANUAL OF THE PRACTICE OF MEDICINE. Prepared Especially for Students by A. A. Stevens, A.M., M.D. Seventh Edition. Cloth. Pp. 556. Price, $2.50 net. Philadelphia: W. B. Saunders & Co., 1905.

MICROTOMIST'S VADE-MECUM. A hand-book of the Methods of Microscopic Anatomy. By A. B. Lee. Sixth Edition. Cloth. Pp. 593. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co., 1905.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE, by J. M. Anders, M.D., Ph.D., LL.D. Illustrated. Seventh Edition. Cloth. Pp. 1297. Price, $6.50 net. Philadelphia: W. B. Saunders & Co., 1905.

HYPNOTISM AS A THERAPEUTIC AGENT. By Prof. A. Binz, author ized Translation edited by C. M. Bloch. 11 Illustrations. Cloth. Pp. 220. Price, $1.50. Chicago: A. Robertson & Co., 1905.

A TEXT-BOOK OF DISEASES OF WOMEN, by R. C. Hiret, M.D. Second Edition, with 701 Illustrations. Cloth. Pp. 671. Price, $6 net. Philadelphia: W. B. Saunders & Co., 1905.

A COMPEND OF HISTOLOGY. By H. H. Badcock, M.S., M.D. 89 Illustrations. Cloth. Pp. 284. Price, $1 net. Philadelphia: P. Blakiston's Son & Co., 1905.

HELPS AND HINTS IN NURSING. By J. O. Griffith, M.D., Ph.D. Family Edition. Cloth. Pp. 480. Price, $1.50 net. Philadelphia: John C. Winston Co.